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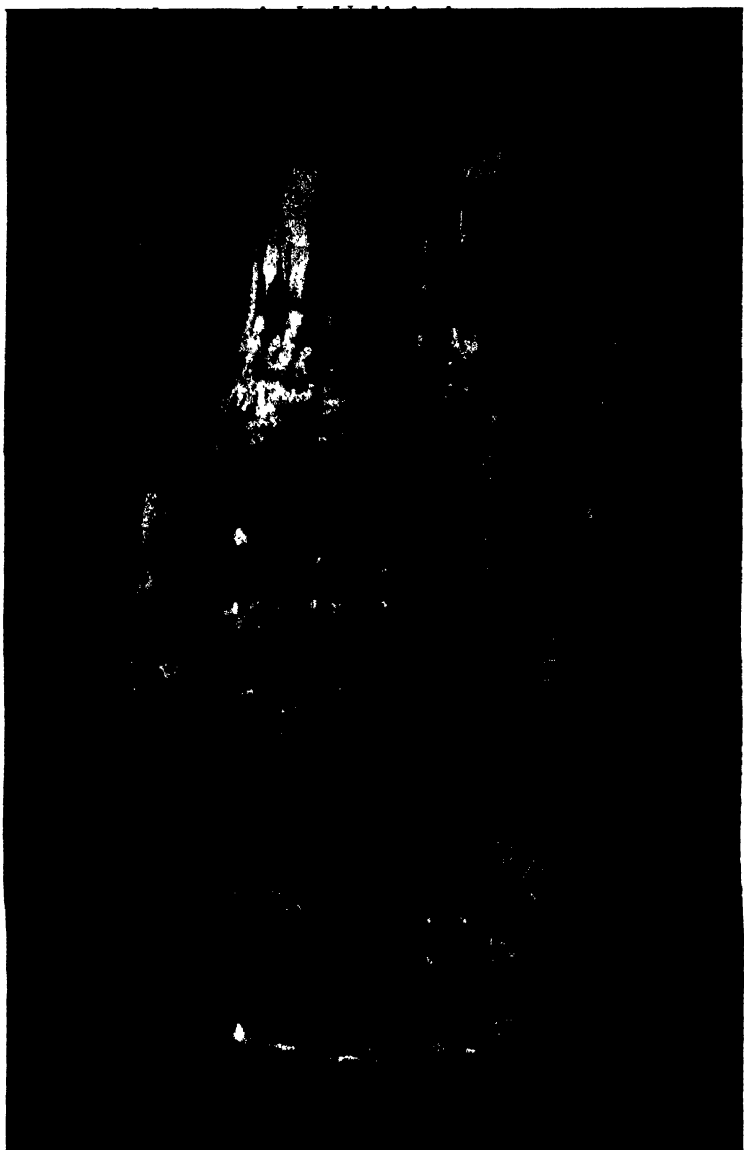
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In Preparation

ENGLISH PRINTS

BASIL GRAY

Assistant Keeper in the British Museum



Bottle ; brown amber, mould-blown in Hellenistic style ; opaque-white handles. Mark, ENNIΩN ΕΠΟΙΕΙ, mould-blown. Made by Ennion of Sidon. Found at Panticapaeum (South Russia). Sidon or Rome ; early 1st century A.D. H. 7 $\frac{3}{4}$ " . Hermitage Mus., Leningrad. See p. 6.

Frontispiece

ENGLISH GLASS

BY

W. A. THORPE

ASSISTANT KEEPER IN
THE VICTORIA AND ALBERT MUSEUM

With twenty-four pages of illustrations
from photographs
and thirty figures in the text

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The United States
THE MACMILLAN COMPANY, NEW YORK

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THE OXFORD UNIVERSITY PRESS, MELBOURNE

Canada
THE MACMILLAN COMPANY OF CANADA, TORONTO

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TO
JOSEPHINE

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The primary object of a manufacturer is to do business.
J. K. Thorpe, ENGINEER

The gaffer has got to create his own trade.
James Manning, GAFFER

What is usually described as a 'difference of taste' may
have inexhaustible implications.
I. A. Richards, CRITIC

PREFACE

THIS book is intended to be a survey of taste in domestic-and-fancy glass from the second century to the present. Bottles, mirrors, jewellery, and sheet glass are only mentioned by the way. British or English is taken to mean glasses made in this country or made with a regard for the market of which this country formed a part. With two or three exceptions all the objects illustrated are British-made or British-found, in accordance with the terms of the present series. But the subject can only be treated satisfactorily from the standpoint of international trade. I hoped to include a chapter on the lay-out of the ancient glass industry and such British-found remains as do not belong to the Seine-Rhine appropriation; and a later chapter dealing with the oriental and Italian glass trade in Northern Europe (including England) between the twelfth and the sixteenth centuries. Lack of space has made it necessary to omit them, and to take for granted certain sources, objects and conclusions. For the same reason the documentation of the book has been greatly restricted. So much has been written on lead crystal that it seemed better to stress earlier fabrics which are less accessible to the glass fraternity.

There is no section on process as such, but several matters of process are incorporated in the text. A few technical terms and abbreviations are explained in the index. A note for collectors has been requested and will be found on page 259. I hope that obligations to pub-

lished works will be sufficiently acknowledged in the list given on pages 263-272, and that glass friends will forgive me if I have not been able to analyse in detail some of the favourite lead-crystal families or the idioms of the areas. Dr. Fremersdorf's paper on the claw-beaker came to hand when the first part of the book was already written.

I am under obligation to the following persons for permission to illustrate or mention glasses in their possession or their custody, for getting objects out of cases, for help in obtaining photographs, and for other assistance: the Editor of *The Antique Collector*, Mr. John M. Bacon (London), Mr. Ernest Bailey (South Shields), Mr. D. H. Beves (Cambridge), Mr. J. W. Bodger (Peterborough), Mr. R. C. Bosanquet (Alnwick), Mr. Eric Birley (Durham), Mr. E. Brand (Rotherham), Mr. Rowland Burdon (Castle Eden), the Editor of the *Burlington Magazine*, Dr. W. E. Collinge (York), Dr. J. G. Callander (Edinburgh), Mr. Louis Clarke (Cambridge), Mr. Norman Cook (Maidstone), Miss M. H. Cooper (Lewes), Mrs. Croucher (Westbere), the Custodian of Chesters Museum, Mr. Osborn Dan (Wateringbury), Mrs. Dickson (Bournemouth), Mr. A. J. H. Edwards (Edinburgh), Mr. Ralph Edwards (London), Mr. J. B. Fay (Hull), Dr. Fritz Fremersdorf (Cologne), Miss Marian Frost (Worthing), Mr. A. J. Golding (Maidstone), Mr. C. Green (Gloucester), Mr. W. A. Gunn (Newport, Mon.), Mr. Walter Harding (Liverpool), the Director of the Hermitage Museum (Leningrad), Mr. G. H. Hill (Buxton), Mr. Edwin Hollis (Aylesbury), Mr. Andrew Hunter (Edinburgh), Mr. M. R. Hull (Colchester), Dr. Ince (Sturry), Mr. F. Jackson (Wroxeter), Mr. E. J. James (Shrewsbury), Mr. T. D. Kendrick (London), Mr. H. A. Kennedy (London), Mr. William King (London),

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More particularly I am grateful to Mr. James Manning (Bromley) for the wisdom of his trade (however unworthily it may be here applied), and to Mr. John M. Bacon (London) and Mr. D. B. Harden (Oxford) for their glass conversations. Mrs. C. M. Weekley has kindly made the drawings for Figs. 1 and 4. And to my wife I am peculiarly indebted for helping me to reduce accumulated notes to the form of this series.

W. A. T.

September 1934.

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ENGLISH GLASS

INTRODUCTION

IT has been observed by a very great connoisseur that man is an art-producing animal.¹ He is also an animal who lives in trading societies. An object of art—or as I would prefer to call it, a finished article—is primarily an object of trade and it is not finished unless some person is willing to be persuaded to buy it. It is not finished unless it has an appeal. The bias of determination may rest with the producer or with the customer, but in either case the article is the medium of an exchange of tastes which can only take place over a counter. Taste bullies and is bullied, but it is free.

The glass industry in Roman times had two 'sides', the Alexandrian and the Syrian. Wood Bros. of Barnsley, Chance's, U.G.B., and the cut-crystal houses of Stourbridge and Birmingham would have been on the Alexandrian side; Powell's, Moncrieff's, Eda, Orrefors, Murano, Normandy on the Syrian side. The code of work of Alexandrian glasshouses, in Egypt, and then in Campania, at Rome and elsewhere, was derived from an old Syrian sand-core process which had been introduced to Tel-el-Amarna in the XVIIIth dynasty after a raid on the industrial areas of Syria. There are many vestiges of 'old style' habit in Alexandrian work of the early centuries A.D. During the

¹ *Criterion*, xiii, 1934, p. 620 (W. W. Winkworth).

first millennium B.C. 'old style' sand-core glasses (mainly small coloured bottles with combed and marvered decoration) were probably made and distributed by the Syrians of Syria as well as by the transplanted industry 'in ordinary' of Egypt. Compare Ezekiel xxvii-xxviii. Besides the fundamental sand-core process the Alexandrian code included certain other processes and specialities as follows. (1) The use of cane both in turnery processes and in sectional layouts; the latter development was a response to the mosaic industry of which Alexandria was the chief centre. (2) A highly developed technology of glass colour. This was applied for the manufacture of coloured glass pastes, opaque coloured glass, expert tone colour in clear glass, and: (3) Crystal, colourless or nearly so; *le cristal* as distinct from *le verre*, which was Syrian. (4) Formative pressing and formative moulding without the aid of inflation. Inflation was introduced to Alexandria from Syria about the first century B.C. and it was applied for mass-production, including: (5) The bottle industry (or 'common square'). Common squares were blown in a mould and have a meniscus like modern pneumatically made bottles of the same shape. (6) Cutting was a response to the cutting of gems in the jewellery trade, of which Alexandria was the headquarters.

From the end of the first century B.C. glass was sometimes blown at Alexandria, but it was not *inflational*. It is uncertain how far mass-production at Alexandria meant mechanical production.

The Romans, that is the Latin-Italian people, were not glassmakers and not glass-minded. They were not plastic people. I can find only one Roman writer who betrays a genuine sensibility to glass. Seneca hits the nail on the head in speaking of these rather surprising glassmakers '*qui spiritu vitrum in habitus plurimos forma[n]t qui vix diligenti*

INTRODUCTION

manu effingerentur'.¹ But then Seneca was an exceptional person. The ordinary Roman, the rich men with whom Seneca dined, the collectors and house-furnishers who 'made' Alexandria, had a genius for detail. They were card-indexers and ritualists, good at bits and parts.² They behaved bittily themselves and they made others do the same. And from the Alexandrian 'side' they requisitioned three kinds of glass which really belong to Roman art: murrines, diatreta, and the common square.

Murrine was an Oriental dealers' word and rather like 'opal' in the modern glass trade. It was a rough-and-ready shop category. It meant fancy goods, cups, and the like, made of ringed and streaky stones, precious or semi-precious, and cheaper imitations made of many-coloured glass. That is why Roman writers described it so differently and were so often taken in by the fakes. In 61 B.C. an exhibition was held in the Temple of Jupiter Capitolinus of stone murrines (cups and bowls), brought home by Pompey and other out-there men from the war in the East. They created a sensation. The Alexandrian glass manufacturers snapped on to it (*quae protinus*) and flooded the Roman market with fakes in a year or two: '*Eadem victoria primum in urbem myrrhina invexit, primusque Pompeius capides et pocula ex eo triumpho Capitolino Iovi dicavit, quae [=fakes] protinus ad hominum usum [=less expensive] transiere, abacis etiam escariisque vasis expetiitis* [trays³ and table-ware being all the rage]' (Pliny, *N.H.* xxxvii, 18).

There are two main kinds of glass murrine: streakies and bitties. The former were nearer to a stone pattern and were still selling well in Hadrian's time (*calices allassontes*

¹ *Epist.* xc, 31, on the progress of science and industry in modern times.

² R. West, *Römische Porträtplastik*, 1933, p. 247; cf. Kaschnitz-Weinberg in *Formes*, viii, 9.

³ *Abacis* may also mean mural panels (Vitruvius).

versicolores).¹ They are fairly common on Roman service sites in Britain (Plate I *b, c*) and probably the British squires bought them for Urban snobbery. Bitties are scarcer in Britain. They were an early extension of the murrine ramp to cover the Roman taste for mosaic treatment. Sulla fell for mosaics, and in the first century A.D. Seneca (*Epist.* 86, 6) admits his shyness because he did not possess a 'glass room' (*camera vitrea*) with glass-mosaic panels and tiles. The shyness applied to murrines, especially the bitty ones in which each cane slice is discrete.

Diatreta, a plural, was probably an Alexandrian work-word (like 'cullet' or 'punky'), half Greek, half Latin. As was pointed out long ago by Salmasius in a very shrewd note, it meant glass vessels with *any* cut decoration. *Open-work* cutting was not implied and was first practised in the third century by Alexandrian cutting shops on the Rhine in linear network patterns with a Northern appeal. '*Eodem plane sensu diatreta vasa vitrea, Graecis appellata sunt, quae sculpta cavataque essent. Huc adde quod omnibus locis quae caelum caverat, quasi pertusa perforataque videbantur, translucidior scilicet per illa visu. Hinc διατρητα dicta. Caro autem venibant. . .*'²

The typical Flaminian cutting of Alexandria and Rome was adapted from the scoop of the gem-cutter's wheel and consisted of 'hollowed' (see p. 214) diamonds, long diamonds, long hexagons, ovals, roundlets, and other motives, in a closed mosaic arrangement: '*Calix vero diatretus Ulpiano intelligitur tessellatus et torno [cutting-wheel] concinnatus, unde diatretarii id genus*'.³

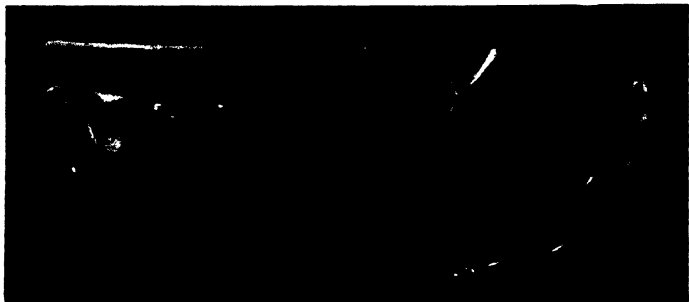
There also exist cut glasses with partitioned circles in

¹ Hadrian to Saturninus, of cups blown in Egypt (Vopiscus, *Sat.* viii, 10); referring probably to the grading off of one glass colour into another, as often in existing examples.

² C. Salmasius, ed. of *Hist. Aug. Script.*, Paris, 1620, p. 458; my roman.

³ Rhodiginus, *Lect. antiq. libri xxx*, Paris, 1599, col. 1279; my roman.

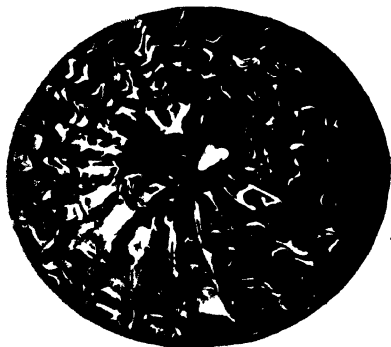
PLATE I



(a) Bowl, ice-green, mould-pressed, fire-polish; ground rim. Found at Berechurch (Essex). Alexandria or Italy; late 1st century A.D. Diam. 7". Colchester Mus., No. 7326-27. See p. 2 (4).



(b) Murrine bowl, streaky blue-white-and-yellow, mould-pressed ribs twisted in delivery, fire-polished. Found at Silchester. Alexandria or Italy; late 1st century A.D. Diam. 4 $\frac{1}{4}$ ". Reading Mus. See p. 3.



(c) Murrine bowl, streaky blue-and-white, mould-pressed ribs twisted

INTRODUCTION

the manner of mosaic designs. The Alexandrian cutting trade (*diatretarii*) were of course distinct from the gaffers (*vitrearii*), but equally free and equally privileged. From some verses of Martial (xii, 74) written between A.D. 96 and 102 on a 'Buy Roman' note, it is clear that Alexandrian cutting firms had lately established their Pawls and Haedys (p. 212) in the Circus Flaminius, the Holborn Circus of Rome. Martial observes that these cut glasses were less delicate than real Alexandrian and unlikely to terrify the servants. Such Flaminian is well known in this country by a bowl in the British Museum and fragments from provincial finds. I think it was shop cutting, not glasshouse cutting. On the Rhine the *diatretarii* (from about A.D. 200) went in for spaced rather than closed mosaics, and for grooved linear network. Of this Northern appeal there are fine examples at South Kensington and at Mainz.¹

The common square was a perfect D.I.A. product (p. 255) and well suited to Mr. Eric Gill's theory of 'plainness'. It was made in squares, rectangles, and cylinders to save space on wagon floors and the shelves of grocers' and wine-merchants' shops. Blown bulges bumped and had to be basket-cased like Chianti bottles; and to organise a square bottle industry in all parts of the Empire was the work of a Roman mind. 'Proprietary' Roman designs are thus described by Columella in his book on practical farming (*De R. R.* xii, 4. 4; mid-first cent. A.D.): '*Vasa autem fictilia vel vitrea plura potius quam ampla et eorum alia recte picata, nonnulla tamen pura, prout conditio exegerit, haec vasa dedita opera fieri oportet patenti ore, et usque ad imum aequalia, nec in modum doliorum formata, ut exemptis ad usum salgamis [pickles] quidquid superest aequali pondere usque ad fundum deprimatur*' (Plate II c).

¹ *Röm.-Germ. Wegweiser*, 8, Fig. 11 (2).

Full Roman names occur in bottle-house marks and suggest that this was the branch to attract Roman capital. The chemist and the hands (not gaffers) were probably from Alexandria. In Gaul and Britain the square loses its firmness of form and silkiness of metal towards A.D. 200. It lasted as long as Roman fashions. The gap seems to have been filled by a great Syrian 'dynasty', Frontinus and Sons, bottle manufacturers, of Picardy. Their barrel bottle (type Plate II *b*) was blown in the two-piece Syrian mould (cf. *frontis.*). It was sufficiently useful and elegant to make a large business for Frontinus and numerous smaller firms. Its form flattered the native wine trade and shows a flair for selling which is typically Syrian. The firm employed gaffers of their own race and craft and allowed each chair's work to bear its gaffer's name.

That is the extent of the Roman appropriation and brings us to the artists of glass. Inflation was developed in Syria, probably at Sidon,¹ about the third century B.C. It was a commercial development by a commercial people, who wished to enlarge the usefulness of their wares. The Pax Romana gave them their chance, and they took it, and they kept it. When they first made sale for the new ware the industrial world was still clinging to Greek routine. For a time Sidon manufacturers were tied to shapes and patterns which did not emerge from Syrian glass process or from the Syrian mind. For selling purposes Ennion (*frontis.*) and other Sidonians made a success of Greek routine, sometimes mould-blown with an advertisement ('Jason

¹ Ancient allusions to the fame of Sidon may be summed in Pliny's *artifex vitri* (*N.H.* v, 76). No other ancient city receives this almost personal title. No attempt is made here to deal with Sidon and Syrian glassmakers, Sidonian-made glasses and Syrian and other Near-Eastern finds of blown and mould-blown glass. Free-blown Syrian shapes and Syrian habits of work are frequent in glass of Seine-Rhine manufacture, 2nd-6th centuries, but I have no room to parse them here. For earliest blown glass see *Zeitsch. für angew. chemie*, 1928, pp. 203-204.

INTRODUCTION

make; lest you forget'). When they blew free, glass became a new art. Long handling of fine things had made the Syrians a race of connoisseurs. It gave their gaffers a higher sensibility than is possible to European eyes. Their *Ting ch'ing* metal and soap-bubble bulges, their sticking-parts and filmy blown undulations, stand with T'ang-Sung pottery among the exquisite things.

But Syrians never forgot the main chance. They were too clever to allow mere Romans to be enriched by Syrian skill. They had their 'quarters' in the great industrial cities. With the family tradition of their successors at l'Altare, Murano, and in Normandy, Lorraine, Poitou, they combined a willingness to migrate,¹ a fervent sense of parenthood, a racial solidarity, a genius for selling, Semitic qualities which no other glassmakers have ever possessed:

D X M

ET · MEMORIAE · AETERNE · IVL

I · ALEXSADRI · NATIONE · AFRI · CIVI

CARTHAGINESI · OMINI · OPTIMO · OPIF

ICI · ARTIS · VITRIAE · QVI · VIX · ANOS · LXX[V]

MENSEN · V · DIES · XIII · SENE · VLLA

LESIONE · ANIMI · CVM · COIVGE

SVA · VIRGINIA · CVM · QVA · VIX

¹ By a decree of Constantine in 337 various master craftsmen, including both the *vitrearii* and the *diatretarii*, described as 'tarrying in various cities' (*per singulas civitates morantes*, implying a not very permanent residence), were exempted *ab universis muneribus*; were encouraged to maintain their own craft education on their own lines; and encouraged to train their own sons (*suos filios erudire*); see *Cod. Theod.* 13, 4, 2. In the dynasties, at home and abroad, of Murano, l'Altare, Normandy, Lorraine and England, the training of a 'boy' by his own father has been the foundation of good glassmanship. And in all these later periods the gaffers have been an *ordo vagorum*. This international character of the later industry was clearly established by the great work of Schuermans and Pinchart. Gaffers and whole chairs still go where they can and will.

ENGLISH GLASS

SIT·ANNIS·XXXXVIII·EX QVA
 CREAVIT·FILIO III·ET·EILIAM
 EX QVIBUS·HIS·OMNIBVS·NE
 POTES·VIDITE·DEOS SVPEST
 ITES·SIBI·RELIQVIT·HVNC
 TVMVLUM·PONENDVM CV
 RAVERVNT·NVMONIA·BE
 LLIA·VXSOR·ET·IVLIVS·AL
 EXSIVS·FILIVS·ET·IVLIVS·F
 ELIX·FILIVS ET·IVLIVS GAL
 LONIVS·FILIVS·ET·NVM[O
 NIA·BELLIOSA·FILIA IT[EM]
 NEPOTES EIVS·IVLIVS AV[CT]
 VS IVLIVS FELIX IVLIV [S ALEX]
 SANDER IVLIVS GALON [IVS IVLI]
 VS LEONTIVS IVLIVS GAL[. . .]
 IVLIVS EONIVS·P·CYRI [ET SVB ASC]
 DEDIC AV[ERVNT]¹

Glass was one of several trades in which, as St. Jerome remarks, they 'captured the Roman world'.² When they settled between Seine and Rhine at the beginning of the second century they were free of Greek routine, and their market was returning from Roman fashion to its own preference. Seine-Rhine glass represents this direct contact of Oriental sensibility and process with the Celtic and German taste of Northern Europe.

¹ Tombstone of Julius Alexander, Carthaginian owner-gaffer, found at Lyons in 1757, *C.I.L.* XIII, i. l. 2000. The names of the grandsons are imperfect. VIDITE DEOS = *vidit et eos*; VIRGINIA = married in girlhood.

² St. Jerome (4th cent.), *Comm. in Exekiel*, xxvii, in *Pat. Lat.* 25, 313: '*orbe Romano occupato*'.

CHAPTER I

THE NORTHERN APPROPRIATION

THE transformation of Roman Britain into Anglo-Saxon England has been expressed more than once by the word 'erasure'. It is rather a wholesale word. Roman civilisation disappeared during the fifth century and invaders from the north-west of Europe created a new island which had few links with the Roman past. A Channel culture gave place to a North Sea culture. In accordance with this break in insular tradition, the earliest glasses found in Britain have been called, in a general way, Roman, although only a portion of them have any title to that name. Until recent years the century of invasion has been left almost glassless.¹ And invasion glasses ascribed to the sixth and seventh centuries have been classed as Anglo-Saxon with an equal disregard of the industry which produced them. For if 'Anglo-Saxon' means Anglo-Saxon in production, there is little evidence that the invaders were a glassblowing people like the Syrians. Glassmaking² was not their line and they failed to introduce it into their new home.³ And if 'Anglo-Saxon' means Anglo-Saxon

¹ Thus Baldwin Brown, *Arts in Early Eng.*, iv, 1915, pp. 479 *seq.*, in a few rather misleading pages, would assign only three glasses to the fifth century; and one of them was a fourth-century glass.

² Other than glass for jewellery.

³ (i) In 676 Benedict, founder of the Abbey of Wearmouth, was obliged to send to Gaul for glassmakers to furnish his building with windows and his tables with glass vessels: '*Proximante autem ad perfectum opere, misit legatarios Galliam qui vitri factores, artifices videlicet Britannis eatenus incognitos, ad cancellandas ecclesiae porticumque et caenaculorum eius fenestras adducerent. Factum*

in market, the market was not peculiarly Anglo-Saxon. Glasses of the same style, and even of the same specific types, were supplied by the Seine-Rhine glasshouses to Germany, Belgium, Northern France, Denmark, Norway, Sweden, as well as to the peoples who created England.

The distinction between 'Roman' and 'Anglo-Saxon' glass has one justification. In the third and fourth centuries the remains of Seine-Rhine glass in Britain are sufficiently numerous to argue that glass vessels were imported commercially.¹ After the fourth century it is not so. The nature of the glasses themselves, their careful preservation, and above all, their fewness, suggest that the invaders brought their glass with them. We are concerned in the main with treasured possessions rather than traded goods. For this reason invasion glasses of high-class manufacture may well be two or three generations older than the burials in which they have been found. So writes St. Augustine of glass heirlooms: '*nonne fragiliores sumus quam si vitrei essemus? vitrum enim etsi fragile est, tamen servatum diu durat: et invenis calices ab avis et proavis, in quibus bibunt nepotes et pronepotes. Tanta fragilitas custodita est per annos*'.²

que est, venerunt; nec solum opus postulatum compleverunt, sed et Anglorum ex eo gentem huiusmodi nosse ac discere fecerunt; artificium nimirum vel lampadis ecclesiae claustris, vel vasorum multifariis usibus non ignobiliter aptum' (Bede, *Vita Abbatum*, 5). But: (ii) the 'Angli' did not respond to this tuition. In 758 another Wearmouth abbot, Cuthbert, was in the same difficulty as Benedict both for vessels and windows. He applied to an archbishop in the Rhine glassfield, Lullus of Mainz: '*si aliquis homo in tua sit parochia qui vitrea vasa bene possit facere, cum tempus arrideat, mihi mittere digneris, aut si fortasse ultra fines est in potestate cuiusdam alterius, sine tua parochia, rogo ut fraternitas tua illi suadeat ut ad nos usque perveniat, quia eiusdem artis ignari et inopes sumus*' (Cuthbert, *Epistolae* 22, *Pat. Lat.* 96, 839).

¹ Down to the fourth century fragments are frequent relatively to entire vessels, and suggest the disregard of daily use, and easy purchase. After the fourth century fragments are rare relatively to entire vessels, and suggest, in England, a scarcity value.

² St. Augustine of Hippo (*b.* 354, *d.* 430), *Sermo xviii*, 7, *Pat. Lat.* 38, 128.

With this exception there is no breach in the tradition of the glass industry, corresponding with the Frankish invasion of Gaul or with the 'erasure' of Roman-British civilisation. It was only that times were difficult for the manufacturer. On the Continent the avenues of distribution were disturbed, though not destroyed, by a state of war. The Rhenish manufacturers were deprived of the Roman convoys which had made the North Sea safe for commerce, and they lost an extensive overseas trade in Scandinavia and Britain. A change in production policy naturally followed this contraction of the market. In the fifth and sixth centuries Rhenish glass manufacturers abandoned wares of common use which they had produced for the Roman citizens of the North. They turned instead to high-priced luxury glasses for the aristocracy of the invading peoples.¹ Such are the claw-beakers and cone-beakers brought into England. The words of Bède already quoted—*non ignobiliter aptum*—are a hint of scarcity values and a presage of *noblesse verrière* in mediæval Europe. Nor is it difficult to find the cause of this change. The industry in the North was still a Syrian racket, maintained through times of stress by a Semitic hardihood, and adapted with Semitic astuteness to northern society and northern taste. The gaffers on the Rhine had a racial aptitude for fitting into a new environment and as long as there was a profit in glass they would 'sooner risk their lives than be poor'.²

¹ Until about A.D. 400 cheap stuff is greatly in the majority. After A.D. 400 high-class models like the claw-beaker and the cone-beaker (Plates X-XII and XIII a, b) become *relatively* more frequent than cheap stuff.

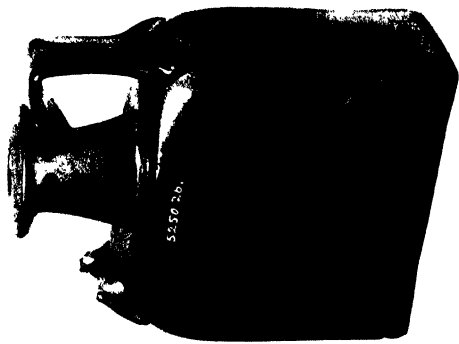
² For the epigraphic and other evidence in support of this view see C.I.L. XIII, 2000, 2005, 2007, 8322, 8323, 8342, 8343, and Fremersdorf in *Archäolog. Anzeiger*, 1931, cols. 132 *seq.*, esp. col. 148 and note 2; Gregory of Tours, *Hist. Franc.* viii, 1; St. Jerome, *Comm. in Exekiel*, xxvii, in *Pat. Lat.* 25, 313, and *Comm. in Isaiam*, v, 23, in *Pat. Lat.* 24, 228; Jonas Abbas Elnonensis, *Vita S. Columbani* 41, in *Pat. Lat.* 87, 1035 (solidarity of Syrian tradesmen); Dill, *R.*

The area of the Northern appropriation may be described as the Seine-Rhine glassfield. Within it the chief centres of production remained where they had been established at the beginning of the second century: the Forêt d'Argonne in Lorraine, the region of Trèves, the Rhineland about Cologne and Mainz, Picardy near Amiens and Beauvais, and Belgian Gaul near Liège and Namur. As the northern style becomes more explicit the Gaulish industry seems to lose ground, while the glasshouses of the Rhineland gradually reached a position like that of Antwerp early in the seventeenth century. Some varieties of glass found respectively in Northern France and in Western Germany suggest certain differences of idiom between the Rhenish end of the industry and the Gaulish end. But such differences are not sufficiently certain to afford a basis for criticism. Mr. Morin-Jean has pointed out with his usual acumen that the region between Seine and Rhine was an industrial unity. We are concerned with an area of exchange in traded glasses, a tissue of 'piracy', a migration of gaffers. The markets exploited by this single industry were partly Celtic in taste and partly German, and I shall not try to distinguish the vitreous equivalents of Celtic art from those equivalent to German art. A common appeal was incorporated in production policy and constitutes a single glass style.

The era of the Northern appropriation began about

Soc. in Merov. Gaul, iii, 245; Kisa, p. 239, and pp. 945-7 (esp. Nos. 47, 596; gaffer-marks of Syrians with Greek and Latin trade names working for a Syrian firm, Frontinus and Sons, in N.-E. Gaul). For industrial position of Syrians see L. Bréhier, 'Les colonies d'Orientaux en Occident', in *Byz. Zeitsch.* xii, 1903, pp. 1-39 and Cabrol-Leclercq, iii (2), 2266-2277. Oriental shapes and processes, as distinct from Hellenistic, occur frequently in Seine-Rhine; one of the commonest is a carafe form which developed into the mosque lamp.

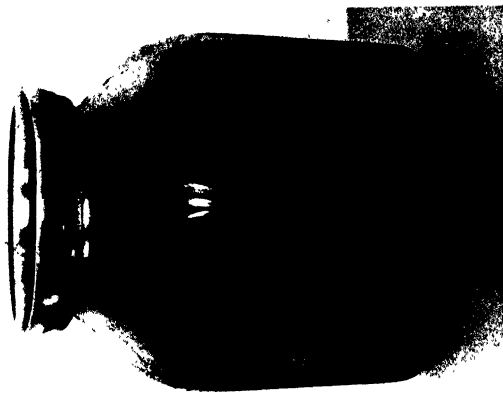
The Syrians' field-day in N. Europe reached its zenith under their great Emperor Alex. Severus of Arce (222-35), contemporary of Snake Thread (Rhine) Ltd. (below, p. 33).



(a) Oblong bottle, dark-green glass, blown and pressed in mould. Mark, CACV, moulded on base. (Same mark on fragment of similar bottle, Leicester Mus., No. 2907-87). Found at Colchester. Roman; late 1st or early 2nd century. H. 6 $\frac{3}{4}$ ". Colchester Mus., No. 5250-26. See p. 5.



(b) Barrel bottle, blown in two-piece mould. Mark, FRONI (ex officina Frontini), mould-blown on base. Found at Milton-next-Stirling-bourne (Kent), 1869. Made by firm of Frontinus, N.-E. Gaul; 3rd century. H. 8 $\frac{1}{2}$ ". Eastgate House, Rochester. See p. 6.



(c) Pickle jar, thick blue-green glass, mould-blown, five concentrics on base. Found at Cirencester, 1765. Roman; late 1st or early 2nd century. H. 10", base 5 $\frac{1}{2}$ " sq. Corinium Mus., No. E. 1. 329. See p. 5.

three centuries before the Invasions. At the beginning of the second century, when the northern peoples began to get glass in their own taste, vestiges of Greek routine still lingered in shape and decoration. Murrines from the shops at Rome were still fashionable. The Roman 'square' was in its heyday and Alexandrian crystal was winning an establishment on the Rhine. Gaul and Germany did not really care for these things, and as Roman fashion lost its hold on their snobbery they dismissed everything except the Syrian gaffers. The North did not retain the Syrian gaffers for the thin-blown bulges which were their own pleasure as blowing men, but for other glassy operations, capable of linear pattern and conformable to northern art. Blown bulges may sometimes be met in the third and fourth centuries (*e.g.* Plate V *b*), but on the whole inflation becomes a secondary value in an art where it had once been sovereign. Its place is taken by the trail and the drop-on, pincer work and pucellas work, preliminary moulding, and work with the chair tools. These operations were not the invention of the northern industry, but it was in the North that they became organs of appeal. By converting a glass vessel from a statement into a mood, from bulge into line, they satisfied the taste of the local markets and provided the Syrian industry with best-sellers.

The style of the Seine-Rhine glassfield between the second century and the seventh is distinguished among other ancient glass by four chief characteristics. The first of these may be called vertical or beaker form, and can be illustrated in trade models which had a large output. The ordinary drinking-glass is the best example. This vessel begins its career in the first century, and it is then round and globular and sedentary. It owes everything to a modulation of mass and volume and it is entirely Syrian in feeling. There is an excellent London example in the

Guildhall Museum.¹ It is a long way from this little sitter to the Gothic elegance of Kempston (Plate XIII c), but the latter glass evolves from the former by stages which can be traced clearly in continental finds. I have not room to illustrate these stages here, but resume them as best I can. First the sitter becomes taller and more straight-sided. Then it takes roughly the shape and size of a modern tumbler of the slant-sided variety.² From this it rises to the height and proportions of a 'small' lager-glass with or without a single-knop stem;³ in some varieties it attains a tall slim cylindroid shape⁴ and becomes the father of the superb *Spechter* shapes in the German glass industry of the fifteenth and sixteenth centuries. In the last stage of the development the beaker responds to a social custom⁵ of

¹ No. MA.1424, mid. 1st cent., Italy or South Gaul (cf. *Denkmäler*, i, 8). This early type can be readily distinguished from 2nd-3rd cent. examples, which have a knock-off rim and are generally inferior in glassmanship. The early type is not very common in R-B; mainly fragmentary; good examples at Richborough and Colchester.

² This stage is illustrated by the shapes of the following published glasses: *Denkmäler*, i, 58 A and C and 16; Lantier, Pl. 23 B; *Vom Rath*, Pls. XIV, 117, XVI, 139, XVIII, 162 and 164; Hettner, *Führer*, p. 107 illus. No. 79, and p. 102 illus. No. 7; Lehner, *Führer* . . . Bonn, i, Pl. XVIII, 3 A and 4 A, Pl. XVII, 4 B; M-J, Figs. 188, 190, 191, 192, 300 (C); Almgren, Fig. 379; Froehner, *frontis.* (2), front row, two centre glasses; and numerous other examples from Seine-Rhine. There is quite a good example in the Yorkshire Museum, local find, H. 4 in., un-numbered.

³ Examples of this stage: Almgren, Figs. 377, 382 (compare *ibid.* Fig. 387 without claws); Lantier, Pl. 25; M-J, Figs. 193-194; B. J., 1906, Pl. XXVI, 72, g-h; Hettner, *Führer* . . . Trier, p. 107 illus. No. 25, and p. 109 illus. No. 34; Kisa, Fig. 129 a, b, c, Fig. 123; St. Germain Mus. Nos. 12612, 12674, 14046, 29471; Amiens Mus. Nos. 786 and 909.

⁴ For the father of the *Spechter* compare *Sammlung Merkens*, Pl. IV, No. 931, and Pl. V, No. 922; *Vom Rath*, Pl. XI, 96 and Pl. XVIII, 165; Hettner, *Führer* . . . Trier, p. 102 illus. No. 8; M-J, Fig. 262; Kisa, Fig. 102 b; and others of almost cylindrical form. Cf. with these the famous *Spechter* at South Kensington (Schmidt, *Glas*, Fig. 79) and the magnificent vertical forms of earlier date illustrated by Rademacher, *Die Deutschen Gläser des Mittelalters*, 1933, Pl. 33 and Pl. 38. There are of course parallel developments in pot form both in 3rd-5th cents. and in 16th-17th cents. (the *Schnelle* of Siegburg and other Rhenish stoneware).

⁵ See below, p. 43 sq.

the Germans and loses a foot that is no longer needed. So we come to the ordinary drinking cones of the fifth and early sixth centuries, and to a group of three which stand apart from others of their kind. These are the cone-beakers from High Down in the Worthing Museum,¹ from Alfriston in the Lewes Museum,² and from Kempston (Beds) in the British Museum (Plate XIII *a, c*).³ The Kempston beaker is the loveliest ancient glass ever excavated in England. Even in the Seine-Rhine glassfield there is nothing to equal it. Here the industry and the market have done in glass what was done eight centuries later by the builders of the Gothic cathedrals. In the twelfth and thirteenth centuries the taste of the North converted a horizontal Romanesque architecture into an architecture which was conceived vertically. The architects of this change observed a new set of structural necessities, but in the last resort the force which prompted and used them was a decorative and spiritual one. The Kempston beaker, having turned inflation into trail, belongs to the same order as Beauvais Cathedral and King's College Chapel and St. Mary Redcliffe.

The second characteristic of the Seine-Rhine style is hyaloplastic unrest. By hyaloplastic I mean free manipulation of the soft metal by other actions than blowing. From the beginning of the second century the North began to make selection from the appeals which Syrian technique

¹ H. 10 in., top diam. $3\frac{1}{10}$ in., vertex diam. $\frac{1}{10}$ in., pale sea-green metal slightly bubbly, 14 vertical loops, 35 horizontal threads, punty-mark (*Archaeol.* lv, 1895, p. 369).

² Alfriston cemetery, grave 39, H. $11\frac{1}{4}$ in., top diam. 4 in., 9 vertical loops, 20-line horiz. trail (*Sussex Arch. Coll.* lvi, 1914, p. 38 and Pl. xiv. 1), punty-mark.

³ H. $10\frac{1}{2}$ in., top diam. $3\frac{1}{2}$ in., vertex diam. $\frac{3}{4}$ in.; lovely pale sea-green metal, pristine condition, found by Rev. S. E. Finch, 20 October 1863 (*Coll. Ant.* vi, pp. 201 *seq.*), punty-mark. Damaged examples of this *de luxe* model are in London Mus. (No. A.19747, London A.-S. cemetery) and c/o Mrs. Croucher, Walnut Tree Farm, Westbere, Kent (there found, pale green thin-blown metal, H. $10\frac{1}{4}$ in., top diam. $3\frac{3}{4}$ in., 11 vertical loops, 23-line horiz. trail). Five in all.

had to offer. The North did not want sitting shapes and bulge values, it cared little for the play of thin-blown volumes which orientals had invented and only orientals could understand. Its desire was to fluff the profile and fret the bare surface. The satisfaction of this demand put a premium on specific acts of glassmanship which in Syria were only incidental. One of the earliest of these operations was the lining of a vessel with blown¹ ribs, quite a different matter from the massive relief of the gadrooned bowls (Plate I *a*). Lining was effected in several ways. Sometimes the ribs were *started* by incisions in a mould, but the vessel was delivered when its shape and size were only half complete. Inflation was continued after delivery and so the ribs were embodied in the surface of the vessel. Relief is low and gradual, a rippling of still water. In other cases the ribs were started by a freehand trail on the unfinished vessel, and inflation was then completed. If the ribs were too much absorbed in the surface, their definition was strengthened with fine pincers. Straight and vertical ribs were varied in several ways. A twist of the vessel at the moment of delivery from the mould gave the ribs a spiral movement. Or the trail was itself done spirally. I shall refer later to the drop-on in connection with the claw-beaker, and can only mention here one more instance of fretfulness. The Syrians in the East used the cat's-paw grip for sticking-parts of handles, a motive of linear character well received in the North. But the North went further. The central rib of the handle was drawn down far towards the base, and sometimes pincered into a dentil fringe, sometimes snicked with a tool, as one patterns the edge of a pie-crust (Plate IV *d*). And this fuss is very frequent in England during the second and third centuries. (Cf. Plate IV *b, f*.)

¹ Inflation was continued after relief had been obtained.

Of all kinds of hyaloplastic work the trail is the most characteristic of the North. Here was an elementary act of glassmanship perfectly suited to a love of line (Plate VII *a*).¹ It was the equivalent in glass of slip decoration in native northern pottery, but it was not an imitation. The actual motives are usually different in slipware and in trailed glass, and the trail was used a little by the Syrians in the East. Its vogue in the North may be compared with linear cutting of hair and drapery in northern Provincial sculpture. Trails are of two main kinds, turned and free. In the kind most frequent both on the Continent and in England the end of the thread (Plate XI *a*) was dropped on the vessel and wound round it (sequaciously, as Pliny would say) by rotating the blowing-iron or the punty (as may be), to which the vessel was attached. For this purpose the iron was at rest on the chair arms, the gaffer's knees, or other support, and the servitor fed his gaffer with the trail. The linear effect was horizontal to the vessel or horizontally spiral (Plate VII *c*), an effect in two directions, like banded decoration done at the potter's wheel with tool or finger or with brush. Trailing was used vertically as well as horizontally and it was also combined with pincer work. In the latter process parallel trails, horizontal or vertical, were nipped together to form a network of diamonds or ellipses, and so the whole surface became a maze of line. Fifteen centuries later Ravenscroft described this technique as 'nipt diamond waies',² and I shall call it for short NDW (Plate VII *b*). When the trails were laid on too hot a glass and were almost absorbed (Plate VI *d*), they were sometimes squeezed up with pincers into stronger relief ('beetling NDW').³ The same desire for line and a similar

¹ Cf. M-J, Figs. 231, 232, 233, 234, 259; *B.ſ.*, 1881, Pl. V, 1386 and VI, 1481. Compare also p. 30 note 1.

² See *History*, Pl. X, 1 and p. 127.

³ Type represented in England mainly by fragments; compare p. 33 n. 1.

process produced the chain handle, two strands dropped-on separately and then nipped diamond-ways (Fig. 1). Trails were usually of the same metal as the vessel, but a coloured metal was employed for some models. Golden-brown on green is frequent and is seen in a straight-sided beaker at Leicester.¹ Here three threads have been trailed parallel and horizontal, and then hooked downwards at four points to form arches or inverted festoons. The technique is an adaptation of 'old style' comb-work of Egypt, and in many northern glasses of the fourth and fifth centuries the arched trail is still marvered into the body.² The Syrians preferred an unmarvered trail, but they learned this much from the industry which they superseded (Plate IX c).³ The North also made its contribution. The arches, which are low and round in sitting shapes, become taller as the shapes become vertical. In the Leicester beaker and in the famous cone-beaker from Dinton⁴ trailed decoration is acquiring the movement of Gothic vaulting.⁵

The second kind of trail is not conditioned by turnery and has the character of pure scribble. It was done as you decorate an iced birthday-cake with a name and flourish, and in the work of one great firm it attained a mastery of

¹ Leicester Mus. No. 81-'26, H. $3\frac{1}{8}$ in., top diam. $2\frac{1}{8}$ in., base diam. $1\frac{1}{4}$ in., excav. Gallowtree Gate, Leicester, has ring punty-mark, about A.D. 400. For decoration cf. St. Germain No. 13695 (round cup, Forêt de Compiègne), No. 29678 (Vermand); Boulogne Mus. No. 2493 (beaker as Leicester, trail in blue, Étaples); *Denkmäler*, i, 44 right (round cup); M-J, Fig. 268 (beaker, as Leicester).

² A mode of decoration frequent in the Seine-Rhine glassfield for palm-cups, clochettes (Lantier, Pls. 29-30), and cone-beakers.

³ Cone-beaker from High Down (Sussex), Worthing Mus., H. $6\frac{1}{4}$ in., clear green metal, marvered arch trail in opaque white, once duck-egg.

⁴ Bucks County Mus., yellowish green metal ($\frac{1}{8}$ in. thick); horizontal trail round the top, arch trail round the middle with wavy trails above and below the arching, found in 1769, H. 7 in., orifice $3\frac{1}{8}$ in., vertex $\frac{3}{8}$ in., ring punty-mark.

⁵ Compare *Denkmäler*, i, 44 (right) with M-J, Fig. 268.

colour and of design unique in the history of glass. I mean the Cologne glasshouse which we can only call Snake Thread (Rhine) Ltd. (Plate V *a*).¹ The art of Snake Thread was oriental in its origin. Almost certainly the staff came from a Syrian glasshouse² in the Eastern Mediterranean which had learned its colours from Alexandria, but used them for free trailing according to Syrian habit. A few examples of the trailed-snake motive have been found in Cyprus, Syria, at Karanis (Egypt), and elsewhere,³ but it was only in the Rhineland that this motive developed into a style. The bright colours and gold of Snake Thread Ltd. were agreeable to northern customers, and its designs anticipate the tense linear complexity of Scandinavian brooches and the developed animal styles of the Migration period.⁴ In virtue of this successful appeal to northern temperament, Snake Thread belongs to Northern art. Beginning its career a little before A.D. 200, it flourished for about a century and sent its goods not only to all parts of the Rhineland,⁵ where they have been found in large

¹ Another firm working in a related but distinct style, flourished in Gaul about a century later. Snake Thread (Gaul) Ltd. used selfsame trails instead of coloured trails. Typical examples are St. Germain No. 13345 (Jonchery-sur-Suippes, Marne, Lantier, Pl. 25), No. 31382 (Vermand), No. 29471 (Moulins, Allier), all tall beakers. The authorship of Rhenish Snake Thread has sometimes been ascribed to an 'artist' or *Meister*. This personal emphasis is misleading. The nature of the work required a chair of several men, and the designs, though repeated, were invented in the making.

² Vessel sides are as thin as $\frac{1}{32}$ -in. (e.g. Shrewsbury Mus. No. F.63). Such finesse in blowing is Syrian, not industrialised Alexandrian. And Snake Thread trails are *unmarvered*, though often notched.

³ Dealt with by D. B. Harden in *J.R.S.* xxiv (1), 1934, pp. 50-55.

⁴ As a matter of taste rather than a matter of production. Such feeling in design as F. A. Van Scheltema, *Altord. Kunst* (1923), Figs. 47 and 49, or British Mus. *A-S Guide*, Fig. 187 and Pl. XVI, 2, is what I have in mind; although there is no interlacing in Snake Thread. For resemblances of motive compare the gilt spirals of Kisa, Pl. V, i, with Scheltema, Pl. XI and Figs. 22 B, C, D; or Salin, *Thierornamentik*, Fig. 547.

⁵ Numerous at Cologne, Mainz, Bonn, Trèves, and in other German collections. See generally Kisa, pp. 444 *seq.*

numbers, but to Northern Gaul,¹ Denmark,² Sweden,³ Norway, and Britain. To the British examples I shall refer presently (p. 33).

The third characteristic of the Seine-Rhine style may be called imaginative, since an image of a living creature is either intimated in the form of a vessel or represented explicitly. The Syrians in the East blew vessels in the form of swan-like birds, and with the help of a mould they blew fish and bunches of grapes. For three centuries of the Roman occupation the Syrians in Seine-Rhine used their mould-blowing process to fashion bottles and other vessels in the form of human portraits. In these things the 'modelling' of the features is sometimes nearer to the Roman mask-portrait than to northern pattern in Provincial sculpture. The imaginative tendency is distinct from both these kinds of representation. It is what the Germans mean by *phantastisch*. The best commentary on it is a collection of German 'peasant' glass of the sixteenth and seventeenth centuries, like that in the German Museum at Nuremberg. This tradition—and it is a mediaeval tradition—exhibits the same kind of unrest which we find in Seine-Rhine glass between the second and the sixth centuries. It is attained by the same hyaloplastic means. And the Seine-Rhine glasses have the same feeling for fantastic imagery. There is little of it in English glassmakers, but the native genius of the English potter runs to similar expressions, not only in the mask finial⁴ and in the 'aquamanile' of the

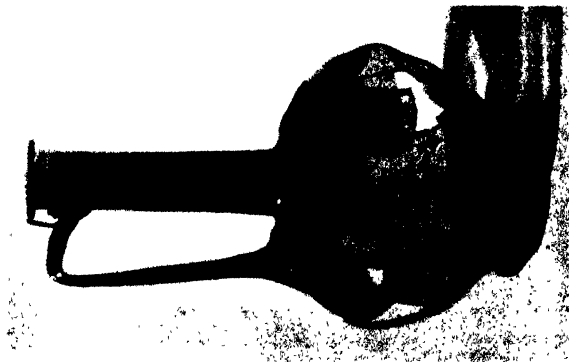
¹ M-J, Fig. 272 (Cany, Seine Inf.), 277 and 281 (Besançon), 278 (Boulogne, Vieil Atre), and others.

² Almgren, p. 909 and Fig. 382.

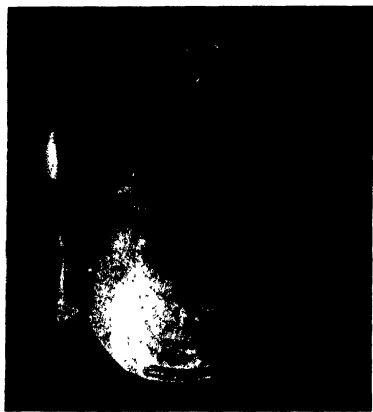
³ Almgren, p. 910 and Fig. 383.

⁴ Compare the famous mask finial in the Nottingham Mus. (V. & A.M. Mediaeval Exhib. Cat., 1930, No. 129) with *Denkmäler*, i, 82-3 (Rhenish, 3rd-4th cent.) and the latter with Rademacher, *Die Deutschen Gläser*, Pl. 9 (German mediaeval phallus glasses).

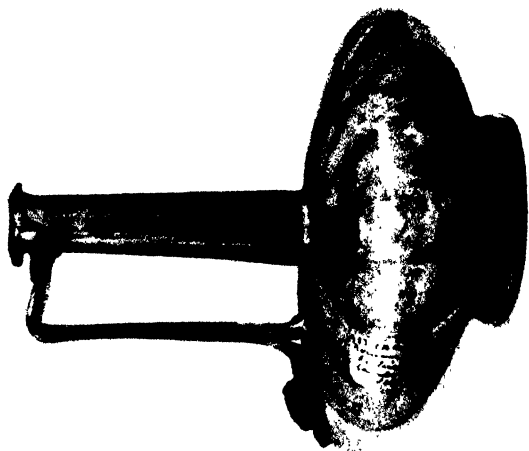
PLATE III



(a) Jug, colored-blue glass, blown thin. Found at Colchester. Italy or S. Gaul; middle of 1st century. H. 8". Colchester Mus., No. 464 PC. See p. 25.



(b) Jug, lemon-amber glass, thin-blown ribs. Found at Colchester, Seine-Rhine; early 2nd century. H. 5½", Diam. 7". Colchester Mus., No. 469 P. See p. 28.



(c) Jug, blown ribs and 'Medusa' sticking-part. Found at Lutlinton, Seine-Rhine; early 2nd century. H. 7½". Cambridge (A.E.) Mus., No. A. 83, C.A.M. 791. See p. 26.

fourteenth century, but in the earliest and the latest¹ Staffordshire figures.

Intimations of birdhood and beasthood begin to be apparent at the end of the second century in several varieties of glass jug. For numerous examples one must go to Rhenish and French collections, but the tendency is well illustrated in a few glasses found in England. One type has a spherical body, a true Syrian bulge, but the lip-spout is drawn outwards and upwards, and gives the vessel a beaky look, like a nestling asking to be fed.² The same image was present to the makers of an exquisite jug at Colchester³ with a low onion body and a handle set at right angles to the spout (Plate VIII *a*), and a pert little jug from Icklingham, now in the British Museum.⁴ In a larger and grosser family, well represented on the Continent and by a good example at Colchester,⁵ the handle beetles high above the upper sticking-part and is fringed with a pincered over-trail. So the birdhood of the spout is completed by the comb of a strutting cock (Plate VIII *c*).

¹ Figures by students at the Burslem School of Art, elicited from Staffordshire instincts by Mr. Gordon Forsyth and exhibited at the Dorland Hall Exhibition, 1933, and elsewhere. The little glass figures known as Bristol toys sometimes show the same sort of fancy (late 18th-early 19th cent.).

² There is a good example at Maison Dieu (Kent), No. 154, local, H. $4\frac{1}{2}$ in., diam. $3\frac{1}{2}$ in., about A.D. 200. Two necks of similar jugs are in the Cirencester Mus. Nos. 48 and 53, both local. Another was found on Combe Down and is in Scarth, *Aquæ Solis*, Pl. XLIV. A fairly frequent model. Cf. *Denkmäler*, i, 29 B and M-J, Fig. 138 (Neuville-le-Pollet, Rouen Mus.).

³ Colchester Mus. No. 229, local find, blue-green metal, pristine condition. H. $3\frac{1}{2}$ in., diam. $3\frac{1}{2}$ in., late 2nd cent. Compare *Denkmäler*, i, 36. The twin brother of Colchester 229 is in *Vom Rath*, Pl. IV, 31. A cousin, a very pretty one, is in Rouen Mus., Room 11, Case 5, Forêt de Bretonne, H. $3\frac{1}{2}$ in. Another cousin, with horiz. trail in Musée de Picardie (M-J, Fig. 137).

⁴ No. 44-2-23-24, 3rd cent. A cousin, rather than a brother, is in *Denkmäler*, i, 36.

⁵ Colchester Mus. No. 470 P, H. $5\frac{1}{2}$ in., local find, pale greenish-blue metal. A twin brother is in *Sammlung Merrens*, Pl. V, No. 1102 (find-spot not recorded, but presumably Rhenish). Compare also Lantier, Pl. LX, A, a cousin (Vichy, Allier), and for an earlier piece of similar type, *Denkmäler*, i, 20.

Beasthood of a different type is seen in a magnificent bottle (Plate V *b*) found at Bourne Park, Canterbury, in 1847, and now in the Canterbury Museum.¹ Here is an overlap of two styles. The body itself perfectly illustrates the Syrian preference for bulge values, and although the neck is a little weak there is not much doubt that the gaffer was a Syrian. But he had cast his eye upon the native jewellery and other metalwork design, and had seen a pair of confronting monsters in what is called the 'animal style'. Here he does the same thing with the trail of his handles. The creatures, whatever they are, dominate even the Syrian bulge, and the bottle is unthinkable without them. And at this date (A.D. 300) beasthood is considerably more explicit than in the birdy jugs at Colchester. As for the bottle itself, the trade model² was a common one in the third and fourth centuries all over the Seine-Rhine glass-field and it is well represented elsewhere in England.³ There are parallels too for beast handles of a rather similar kind.⁴ But I cannot cite another *diota* with monster handles or another pair of monsters quite like these.⁵

¹ Canterbury Mus., no number (*J.B.A.A.* ix, 1847, p. 47), H. 9½ in., diam. 4½ in., clear pale-green metal, found with coin of Carausius (287-93), about A.D. 300.

² K. 137, 138, 135 and M-J 42 give the type. Compare (1) St. Germain Mus. No. 41142 (D'Arcy-Ste-Restitue, *Album Caranda*, NS, Pl. 38, 5); (2) Lantier, Pl. 7 (Châlons-sur-Marne) and 8 (Aisne); (3) M-J, Fig. 112 (Rouen Mus.); (4) M-J, Fig. 116 (*ibid.*); (5) Hettner, *Führer . . . Trier*, p. 109 illus., No. 20.

³ Examples: (1) Colchester Mus., local find (Joslin Coll., given by Gurney Benham), H. 7¼ in., diam. 4¾ in., darkish-green metal, confronting handles (possibly a hare or rabbit image), horiz. trail round lower part, 3rd cent.; (2) Kettering Mus. No. 2, local find, H. 6 in., diam. 3½ in., bubbly metal of yellowish lettuce-green, thin-blown (1⅞ in.-1½ in.), made with one handle only (not beast-like), horizontal-spiral trail all over body. I should put it 4th cent.

⁴ The nearest is a cup at Cologne, No. 24, 347, *Denkmäler*, i, 31, 3rd cent.; its two handles have an ear-floppiness suggestive of hares. Cf. also the jar in *Sammlung Merckens*, Pl. IV, No. 1084. And I think there is a beast image in *Vom Rath*, Pl. IV, 44.

⁵ The nearest is *Vom Rath*, Pl. IV, 33.

Explicit renderings of birds and beasts are not very frequent even in the Seine-Rhine glassfield. The trimmings are the making of the design. I would mention particularly the pig bottle in the Bingen Museum,¹ the pig at Cologne,² and the splendid cock at Boulogne.³ These things are triumphs of glassmanship, and they possess a strength of modelling and an earthy humour which we do not meet again until the seventeenth century. Such things occasionally made their way to Britain. In the Uriconium Museum at Wroxeter⁴ there is the head and neck of an animal found on the site. The total height is now $2\frac{3}{8}$ in. The metal is yellowish olive-green, blown hollow, but not into a mould, the shape being given by tooling on the paraison. Eyes, ears or short horns, and spots, are in translucent smoky-blue paste applied in relief. What the animal is I should not like to say; possibly a sheep or deer. The technique suggests a date about A.D. 300.⁵ The Yorkshire Museum possesses a little bird⁶ $1\frac{1}{8}$ in. long, in opaque-white glass with beak and eyes and wings of opaque-blue glass applied in relief. The bird was attached by its breast to a bottle, like the famous 'dovecote' bottle at Cologne (Plate VIII *b*).⁷ This vessel is a flat pear-shaped two-handled bottle of the *diota* type. During hot fabrication the body was pierced with four round holes, and in and out of the holes fly four little birds of opaque white glass with details

¹ Mainz, Röm.-Germ. Mus., *Kulturgesch. Wegweiser*, No. 8 (Behrens), Fig. 16.

² W-R Mus. No. 549 (*Bonner Jahrb.*, 1896, pp. 50-53, Pl. II, 6, blue glass with yellow trimmings), found in the Luxemburgerstr., Köln. Others in *B. J.*, 1906, Pl. XXIV, 49 a (Cologne) and p. 417 and Kisa, p. 674 (Worms Mus.).

³ Boulogne Mus. No. 2525, local find, M-J, Fig. 213. For another see *B. J.*, 1881, Pl. VI, No. 1372. ⁴ Not numbered. ⁵ See below, note 7.

⁶ In the Hospitium Collection of the Yorkshire Phil. Soc. at York, local find, no data, unnumbered, Rhenish, 4th cent. (below).

⁷ W-R Mus. No. 674, found at Cologne, Rhenish, 4th cent.; bad photograph in Kisa, Fig. 80; good photograph in *Archäolog. Anzeiger*, 1931, 1/2, cols. 131-52 (Fremerisdorf), Fig. 13.

in blue. The York bird belonged to a bottle in the same spirit, and probably of the same form. The spirit has given us cuckoo-clocks and Mickey Mouse¹ and twittering flights from eaves in the German film. It still leads the German people singing through its mountains with a mandoline.

The fourth feature of Seine-Rhine is *Waldglas*, the metal of the North and of a great tradition. It is a species of glass fused with unrefined vegetable ashes² and the proper material of a process which clung to forest for fifteen centuries. No attempt is made to clear the deep iron-green inherent in the materials. The attempt, when there is one, is to deepen it. Concerning *Waldglas* there are two common errors. The first is that the mediaeval glassmakers of the North made it because they could make nothing else. But the mediaeval industry produced quantities of clear colourless glass for windows, and had there been a demand for colourless glass for vessels it was quite capable of response. *Waldglas* remained effective for two centuries after Murano put a clear *verre* on the European market, and when crystal killed it, *verre* also perished. *Waldglas* was a preference, not a necessity. It owed its career to a soft swimmy shadowy effect, which made it responsive to an impressionist style and appropriate to the sombre warmth of Northern interiors. We have said goodbye to the metal of sunshine³ and comparisons with *fons Bandusiae*.

The other error is the notion that *Waldglas* is 'rude' or 'primitive'. At times it is bubbly and badly fused, but there

¹ It is perhaps worth note that Walt Disney is Irish on one side and German on the other.

² Cf. the Peterborough Lapidary (15th cent.): 'Now glas is mad of asshen of trees & of erbes with full strong blastes of feyre' (Evans and Sergeantson, *Eng. Med. Lap.*, 1933, p. 114. 'Now', as against 'first' (above) = 15th cent.

³ The pellucid greens and blues of the miscalled 'pillar-moulded' bowls, metal only realised on a sunny day. This quality is shared by the majority of thinner 'Roman' glass.

has been plenty of third-rate crystal and abominable *verre*. *Waldglas* as a metal has its own standards. Its perfection is seen in the mediaeval German *Krautstrunk* (cabbage-stalk) beaker, and in any good collection of *Römer* like that in the Rijksmuseum at Amsterdam. It is also evident at the Lorraine glasshouses in the Weald and in Blore Park (Staffs). The quality of Lorraine metal in England cannot be judged by vessel fragments which have been in the soil so long, but by droppings of raw metal left on glasshouse floors. These blobs have been found both by Mr. Winbolt and by Mr. Pape. In soft green loveliness and silken purity their metal is unsurpassed even in the *Römer*. It is as good in its kind as Mr. Harden's crystal from Karanis. The metal of the North was first developed in the Seine-Rhine glassfield during the fourth and fifth centuries. Its infancy is seen best in some of the claw-beakers (Plate XI c), where plastic work gives the metal its chance; the makers of the *Krautstrunk* retained the drop-on and only omitted the blowing and drawing. Technically the claw-beaker metal will not compare with that of the *Römer*, but it shows the same realisation of the material by the process. Shadow and swimminess are attained. Eda and Orrefors and our own Powell have attained them by 'waving' the thickness of a modern metal which has the same aesthetic quality.

So much for the organs of appeal. Now for their use in trade models. Early Northern line is particularly well illustrated in jug form. Begin in the Taylor Collection at Colchester (Plate III a) with a well-known first-century model, a lovely bit of Syrian blowmanship and bulge value¹ imported from Italy or Southern Gaul. Then it is

¹ Colchester Mus. Taylor Coll. No. 464 PC, local find, clear blue-coloured thin-blown metal, H. 8 in. Cf. among others *Denkmäler*, i, 5-6 and M-J, Fig. 122 (Valréas, Avignon Mus.).

goodbye to serenity. In the Litlington jug at Cambridge¹ the neck is still the Taylor neck and there is still a 'Medusa' mask at the sticking-part. But the hollow-blown Taylor foot-rim is ready to be closed as with a zip-fastener,² and blown ribs have set in. This is an early Seine-Rhine piece, and the same origin is likely for another jug at Cambridge³ which combines a vestigial Greek orifice with the ribs of unrest. The broad one-handled jug from Bayford (Plate IV a),⁴ now in the British Museum, marks a later stage in the transition and belongs to the second half of the second century; neck and rim still show affinities with the common 'square' in its heyday (early second century). Unrest has passed from the ribbed body into the handle. In the Turriff jug at Edinburgh⁵ we are quit of the South. Here the Seine-Rhine glassmaker knows what he wants to do and does all of it—spiral wrything, the fringe at the sticking-part, the

¹ Cambr. Arch. Ethn. Mus. No. A.83 (CAM 791), H. 7½ in., early 2nd cent. The similar model at Boulogne (No. 2664, M-J, Fig. 143) is later on neck form, which approximates Turriff and Bayford, and comes from a late site (Vieil Atré); but it is not, I think, after 3rd cent. In England the nearest relation of Litlington is Canterbury Mus. No. 929 (King's Field, Faversham), neck of Taylor type, squat inflational body, blown ribs, no mask, 2nd cent. Another, from Old Newton (Suffolk), is in Brit. Mus. These squat bodies were done by centrifugal spinning. For late survival of the Medusa mask, in jug nearing Bayford and Turriff, see the Bexhill jug, Brit. Mus., H. 8¾ in., Payne, *Coll. Cant.* Pl. II.

² The action is similar. 'Zip-fastened' foot-rims are a late feature. Trailed foot-rims also occur, especially in 2nd-3rd cent.

³ Cambr. Arch. Ethn. Mus. No. CAM 765 i, from Shefford (Beds), H. 8½ in., coloured-blue metal, with coin of Vespasian (69-79), about A.D. 100. Cf. also *Archaeol.* lxxiii, p. 12, Fig. 8 (Stanfordbury, nr. Welwyn). The trefoil orifice was retained occasionally by Snake Thread Ltd., about A.D. 200.

⁴ Found Bayford-next-Sittingbourne, Kent, in 1877, pale-green metal, H. 8½ in. (Payne, *Coll. Cant.*, 1893, Pl. VIII).

⁵ Nat. Mus. Antiq. Scotland, No. 1933-2484, H. 9 in., clear green metal, found at Turriff, Aberdeenshire, in 1857 (*P.S.A.Scot.* lxiv, 1930, p. 147). Parallels are cited by the writer in *P.S.A.Scot.*, 1934, where reasons are given for assigning this jug and its brothers to a glasshouse in the Liège-Namur region and to a date in the middle or latter part of 2nd cent. The transition from the Taylor type to the Turriff type is well seen in the fine Murston jug, green metal, H. 12½ in. (Payne, *op. cit.* Pl. IV (1)); but I have failed to run this jug to earth.

slimming of the neck, a rising movement. By the beginning of the third century and in the two-handled jug from Bayford¹ (Plate IV *b*), Seine-Rhine is completely master of its linear and vertical theme. No vessel in England has quite this Gothic accent until we come to the Kempston beaker (Plate XIII *c*) two hundred years later. After Bayford it is rather an anticlimax to turn to the ordinary fool's-cap jugs of the late second and third centuries (Plate IV *f*).² They possess the character of the Seine-Rhine industry without its art, and they are fairly frequent both in England and on the Continent, but they have a certain interest for the combination of vertical and spiral motives, and in a few examples, like the well-known Amiens jug,³ the design is effective.

Sometimes a vertical stress was attained without hyaloplastic aids. The finest example I have seen in illustration or in the life is the lovely bottle from Faversham (Plate IV *e*).⁴ Here the Syrian gaffer in Seine-Rhine has produced a tall slim 'Gothic' bottle in terms of his own inflational bulge. The Eastern Syrians were fond of a two-globule model⁵ which went well in markets which had the same taste as the gaffer himself. Discoveries at Vaison (Southern France)

¹ Brit. Mus., pale olive-green metal, H. 9½ in. (Payne, *op. cit.* Pl. XV). For general affinities see last note. Near parallels are: (1) M-J, Fig. 141, Mainz Mus., small ring handle instead of the second loop handle, 3rd cent.; (2) Kisa, Fig. 322 b, Wiesbaden Museum, a twin brother of Bayford.

² Canterbury Mus. No. 930, H. 11 in., golden-brown metal with greenish tinge, from King's Field, Faversham. The same model occurs in clear-green and in blue-coloured metal (Caerleon Mus. No. C. 28, fragment with both ribs and spirals, 3¼ in. by 1¾ in.).

³ Froehner, *Coll. Charvet*, Pl. XVI, 84, now Metro. Mus. New York, *Room of Anc. Glass*, Fig. 24, top right.

⁴ B. M. Gibbs Loan, No. 1307-'70, H. 9 in., dark clear-greenish metal blown very thin, cracked, parts missing. This collection was bequeathed in law to the South Kensington Mus.

⁵ E.g. De Ridder, VI, 587; Edgar, Pl. VIII; Louvre, Campana, No. 10282; Kelvingrove Mus. No. '03-185 g.r. (Idalium).

produced a similar bottle¹ with five globules, probably made in Syrian glasshouses of that region. It will be seen that the first five globules in Faversham all have a true inflational droop.² But the presence of a sixth globule, the conscious grading of the others, the taper of the neck (contrast Plate III *a*), the nip at the base thereof (cf. Plate IV *b*), the thinness of the blowing, the poor quality and dark colour of the metal—all these things point to a Syrian working in Seine-Rhine at the end of the second century. An artist in blowing for his market. The bottle is certainly rare, perhaps unique. You cannot 'have it both ways' for very long.

Jar urns of the kind shown in Plate III *b* are contemporary with the development which I have described in jugs, but they show less change and less ultimate elaboration. In Gaul inflational conservatism was always stronger than in Belgium and the Rhineland, and accordingly the jar-urn depends almost entirely on bulge. It is usually made in a strong-green metal without ornament, and in shape devolves from a much larger oviform jar, chiefly made in Southern Gaul.³ The shapes incline to squatness and are almost always good. In England the loveliest example in shape and metal is at Shrewsbury.⁴ Belgian Gaul and the

¹ B. M. Comarmond Coll., found in 1819, neck missing.

² In blowing, you tend to get your maximum diameter in the lower part of your vessel. In throwing a pot you tend to draw up and get maximum in the upper part. This is the basic difference between blown form and thrown form.

³ M-J, Fig. 23 (Poitiers); St. Germain Nos. 13395, 49535 (Gard), 13400 (Vaison), 10897 (Douelle), 13397 (Vaison), and others. Cf. *ibid.* three jar urns from Suèvres (Loir et Cher), No. 19520. These jars were probably sold for domestic use, but they were used as urns by people who could not afford a slap-up funeral with one of the fashionable 'Greek' urns from Campania and South Gaul (Brit. Mus.). They do not seem to survive after cremation went out (3rd cent.). A good example of the oviform jar is in London Museum, No. A. 16878.

⁴ Shrewsbury Mus. No. F.75, from Wroxeter (1861-62), H. $4\frac{1}{8}$ in., diam. $5\frac{1}{2}$ in., clear soft blue metal, blown on to a pad, inflational foot-rim, pristine condition.



(a) Jug, clear light-green glass, blown ribs. Found at Bayford-next-Sittingbourne, 1877. Seine-Rhine; late 2nd century. H. 8½". Brit. Mus. See p. 26.



(b) Jug, pale olive-green glass, blown ribs, pincer sticking-parts. Found at Bayford. Seine-Rhine; 3rd century. H. 9¼". Brit. Mus. See p. 27.



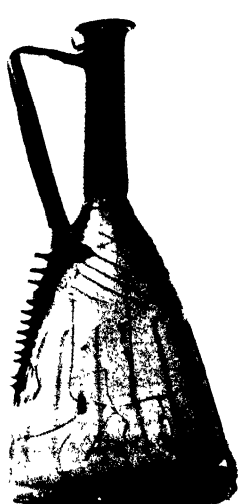
(c) Jug, greenish blown glass, neck-trail. Found at Colchester. Seine-Rhine; late 2nd century. H. 8½". Brit. Mus. See p. 31.



(d) Jug, clear green glass, wavythen decoration, pincer sticking-part. Found at Turriff (Aberdeenshire), 1857. Seine-Rhine; late 2nd century. H. 9". Nat. Mus. of Ant., Edinburgh. See p. 26.



(e) Bottle, dark clear greenish glass, blown very thin. Faversham. S.-R.; late 2nd century. H. 9". Brit. Mus., Gibbs Loan, No. 1307-70. See p. 27.



(f) Jug, golden-brown glass, blown ribs straight and wavythen, pincer sticking-parts. Found at Faversham. Seine-Rhine; 3rd century. H. 11". Canterbury Mus., No. 930. See p. 27.

Rhineland soon assimilated these blown shapes to a Northern pot shape¹ and added the blown-ribs which we have already seen in jugs. This model remained a standard from the beginning of the second century, when the industry settled in the North, until the middle of the third century, and in England it greatly outnumbers the Shrewsbury type. The metal may be pale green, but the most characteristic is a soft golden-brown or amber-yellow of great purity in which we see the first hint of 'swimminess'. Metal and form could hardly be better illustrated than in the Acton jar² at Colchester (Plate III *b*), though no photograph can realise its luminous quality. Students of Chinese pottery will think at once of a lovely T'ang shape which sometimes wears a golden-brown glaze. Soap-bubble values still dominate the native potter's shape and suggest a fairly early date in the second century.

If we may judge by the number of fragments, more glass was used in Britain during the third century than at any other period of the Roman occupation. Entire vessels become rather less frequent, but that is partly accounted for by the decline of cremation and the gradual disappearance of the strong Roman 'square'. The fragments illustrate the style which I have tried to characterise above in the light of Continental entireties, and they suggest that in

¹ E.g. *Denkmäler*, i, 77 B and 84, the latter ribbed.

² Colchester Mus. (Acton Cat. No. 310) No. 469 P, H. 5½ in., diam. 7 in. Less successful examples in England: (1) Canterbury Mus. No. 956, H. 4½ in., pale green metal, King's Field, Faversham; (2) Cambridge Arch. Ethn. Mus., Inskip No. 765 H, H. 5½ in., Shefford (Beds). Fragments are fairly numerous. For a few Continental parallels and evidence of date see M-J, Fig. 5 (Besançon) and Fig. 24 (Coblentz); *Soc. Arch. liégeoise, Ann.*, XII, Pl. VII, 4; *Röm.-Germ. Wegweiser*, No. 8 (Behrens), Fig. 4, No. 3 and p. 27; Hettner, *Führer* . . . Trier, p. 106, illus. No. 1; Fremersdorf, *Röm. Gläser*, Fig. 15 and p. 6; Boulogne Mus. No. 2478 (pale green, ribbed, and local).

I think Acton is a little earlier than *Denkmäler*, i. 21.

this market at any rate the 'Rhenish end' was in the ascendant. In their art the Rhine glasshouses attained a range and vigour which gives them a place beside the *époque* of Murano in the sixteenth century and the German industry in the seventeenth.

An illustrated survey of these England fragments is badly needed, but impossible here. I can only mention the most characteristic appeals and may begin with the simple trail of Plate VII *a*. Here the trail just avoids the horizontal and transforms the ancient 'dolphin' bottle into dynamic line. The bottle illustrated is a Rhenish piece from the Wallraf-Richartz Museum at Cologne¹ and does duty for several England examples which have been less happily preserved.² It dates from about A.D. 200 and introduces a decorative theme which was still used effectively in the claw-beaker.

More elaborate uses of the trail make their appearance in a jug at the British Museum (Plate VI *d*)³ in which the chain handle is combined with NDW decoration (see p. 17). It is not a very good one of its kind, but the best entirety I can discover from English sites. The particular family to which it belongs is certainly Rhenish and has been found both plain and NDW.⁴ The body is usually

¹ No. 26147, H. $3\frac{1}{2}$ in., clear glass with selfsame trail. For permission to illustrate, the courtesy of Dr. Fremersdorf is gratefully acknowledged.

² The upper part of a similar bottle is in the Chesters Mus. No. 2131, from Carrawburgh, top diam. $1\frac{3}{4}$ in., original height $3\frac{1}{2}$ -4 in., greenish metal. This was a lovely piece, but the handles suggest a rather later date than W-R 26147. Another, less good, at Maison Dieu, No. 146, thick pale-green metal, H. $3\frac{1}{8}$ in., entire, punty-mark. Good 'dolphin' bottle, untrailed, in London Museum, No. A.16055, nice thin blowing. Compare *B. J.*, 1881, Pl. VI, 1484 with Beauvais Mus. v. 7 and Boulogne Mus. No. 2687, for similar lining of a (different) blown shape.

³ Pale green, thin-blown metal, found at Colchester, H. $5\frac{3}{4}$ in. (*Coll. Ant.*, ii, 39), about A.D. 300.

⁴ Cf. *Sammlung Reimbold*, Pl. 1, No. 345 (Luxemburgerstr., Köln) and Pl. 7, No. 317 (Bonn); Weckerling, *Paulus-Museum*, ii (1887), Pl. X, 2 (Bernersheim);

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oval, as in the Colchester jug here illustrated, and seems to devolve from a well-known metalwork shape which was more literally translated into glass during the second century (Plate IV c).¹

'Gaulish end' seem to have had better success with their chain-handle models, for the kinds found in North-Eastern

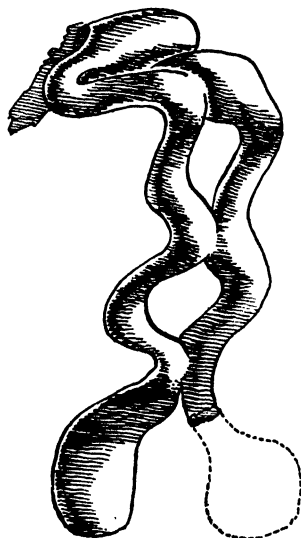


FIG. 1.—Chain-handle (of jug). Clear metal, height now $3\frac{1}{4}$ ". Found at Birrens, Dumfriesshire (1784). Seine-Rhine (Rhenish end): 3rd century. National Mus., Edinburgh, No. F.R. 204 (P.S.A.Scot. xxx, 1896, p. 192).

France are equally characteristic of the Northern style and much stronger in design. One of the most familiar types

Bonn Mus. No. U.1167 (Gelsdorf-bei-Meckenheim), *Führer*, p. 77; M-J, Fig. 128 (Mainz Mus.); *Röm.-Germ. Wegweiser*, No. 8 (Behrens), Fig. 8, Nos. 1-3 (Albansberg, Mainz).

¹ Found at Colchester, pale-green clear glass, H. $8\frac{3}{4}$ in., British Mus. (Slade Coll.). This jug holds the same place in the devolution from its plain stiff first-century take-off to the Albansberg type that the Turriff jug holds in the devolution from Taylor to two-handled Bayford (above, p. 27); and is of about the same date.

has a conical body,¹ while another body is squat and onion-shaped² like the Litlington jug (Plate III c). In both types NDW decoration tends to give place to spiral writhing or a horizontal trail. The chain is a short one of two or three links, like that from Birrens at Edinburgh (Fig. 1).³ We can make a reasonable guess at the place where these Gaul jugs were made. In his book on the famous Charvet Collection, Froehner illustrates⁴ a female skeleton in a coffin, as they were found during the last century at Beauvais, a region thick with the remains of glass. The skeleton was formally surrounded by ten unbroken glass vessels⁵ and three of them were chain-handle jugs. There was nothing else in the coffin. And readers of Espérandieu's book⁶ will remember the world of Gaulish life and industry revealed in the sculptures of Gaulish tombstones, how the tradesman loved to be buried under a picture of the 'shop' where he had worked. Surely the same sentiment prompted the burial at Beauvais. The lady's people were in the trade.

Jugs of the Beauvais type seem to have had a longer career than the chain-handle in the Rhineland, and the same is true of the decoration which I have described as

¹ Cf. Froehner, *Coll. Charvet*, Pl. XIX, 88 and frontis. (Beauvais, grave about A.D. 300).

² Boulogne Mus. No. 2673 m, Vieil Atre; M-J, Fig. 135; Rouen Mus. from Neuville-le-Pollet (Seine Inf.), M-J, Fig. 134.

³ Nat. Mus. No. FR. 204, clear slightly greenish glass, H. $3\frac{1}{2}$ in., *P.S.A.Scot.* xxx, 1896, p. 192. Other broken-off chain handles from British sites are: (1) Colchester Mus. No. CCCCLXVII-LXVIII, local, attached to neck-fragment of its jug, Rhenish 3rd cent. (same type as *Vom Rath*, Pl. VIII, 81, Middle Rhine find); (2) Yorkshire Mus. No. C.21, local, H. $3\frac{1}{2}$ in., 'Gaulish end', late 3rd-4th cent.; (3) Newcastle (Blackgate) Mus. unnumbered, part of handle, local, H. $1\frac{1}{2}$ in., clear colourless glass; (4) Chesters Mus. No. 779, one link, local, rather dark-green metal; (5) Cirencester Mus. No. 58, one flank of lower sticking-part.

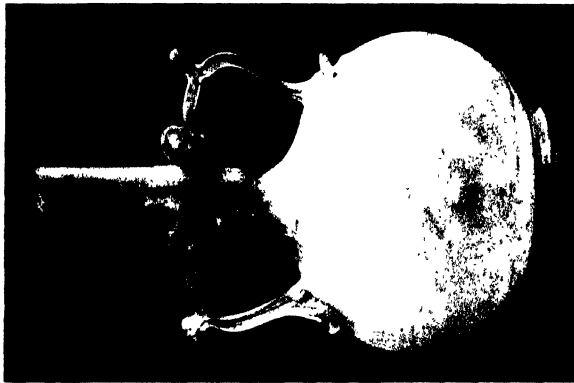
⁴ *La verrerie antique*, 1879, frontis. One of the Beauvais chain-handle jugs contained a coin of Postumus (258-267); *ibid.* p. 78.

⁵ Of these glasses there is one typical Syrian carafe form, while six glasses show Northern sales appeal either in hyaloplastic work or in beaker form.

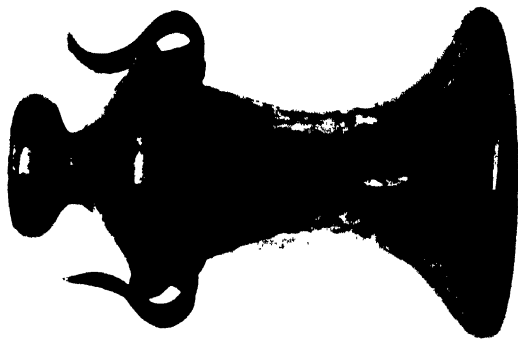
⁶ See bibliography, p. 266.



(a) Bottle, clear glass, decoration trailed in bright blue, opaque-white and gilt threads. Found at Cologne, Cologne (Snake Thread, Ltd.); c. 200 A.D. H. 5 $\frac{1}{8}$ ". Mr. Joseph Lückger, Sürth-am-Rhein. P. 33.



(b) Bottle, clear pale-green glass, handles in the form of confronting monsters. Found at Canterbury, Sene-Rhine; c. 300 A.D. H. 9 $\frac{1}{4}$ " Canterbury Mus. See p. 22.



(c) Dropper (Kuttrolf), bright leaf-green bubbly glass. Found at York, Sene-Rhine or Syria; late 3rd or 4th century. H. 6 $\frac{7}{8}$ ". Yorkshire Mus. (Hospitium). See p. 41.

beetling NDW (p. 17). The latter was still in common use about A.D. 400 among glassmakers of the Gaulish end, particularly for tall and more or less slim beakers approximating the *Spechter*. As a decoration these firm relief threads are much more effective than the fused-in trail seen in Plate VI *d*. England examples of beetling NDW are given below.¹

Snake Thread (Rhine) Ltd. were already flourishing in A.D. 200, but it is natural to conclude the third century with this, its greatest triumph. The Snake Thread fragments listed below are illustrated in Fig. 2 and will be explained by Plate V *a*, one of the finest pieces existing of this firm's work, which I publish here by the courtesy of its owner, Mr. Joseph Lückger of Sürth-am-Rhein. This bottle was found in the Luxemburgerstrasse at Cologne and is $5\frac{1}{8}$ in. high. The symmetrical scrolls are gilt, the body trails bright blue and opaque white, the neck trail bright blue. The firm produced many other models—bottles, jugs, dishes, and drinking-vessels—in the same style,² but in most of the fragments from Britain one cannot be sure what the vessel was:

(1) *Fig. 2a*.—Fragment of vessel, clear thin-blown ($1\frac{1}{2}$ in.) glass, $2\frac{1}{16}$ in. by $1\frac{5}{8}$ in., trail in lemon-yellow

¹ (1) Kettering Mus. No. 3, base of bottle or jug, diam. 3 in., H. now $1\frac{3}{8}$ in., thin-blown ($\frac{1}{8}$ in.) clear metal, local find; on style 4th cent. (2) Rochester Mus. No. 468 B, three vessel fragments, Darenth villa, clear colourless glass, $1\frac{1}{8}$ in. by $1\frac{3}{8}$ in., $1\frac{1}{8}$ in. by $1\frac{1}{8}$ in., $1\frac{1}{8}$ in. by $1\frac{3}{8}$ in., 3rd cent., found with Snake Thread (below, p. 36). (3) Newcastle (Blackgate) Mus. No. T.14 a 6, fragment $1\frac{7}{8}$ in. by 1 in., clear colourless thin-blown ($\frac{3}{32}$ in.) glass, from Condercum, on style 3rd cent. For continental examples see: St. Germain, from La Fortelle, Oise (Lantier Pl. 27); Hettner, *Führer* . . . *Trier*, p. 102 illus. No. 8 (opaque-white metal and trail, from Ehrang); *Vom Rath*, Pl. VIII, 80 (Middle Rhine find) and Pl. IX, 82 (curved drinking-horn, mid-Rhine find).

² On Snake Thread (Rhine) Ltd., its location and identity, I follow Fremersdorf, Lehner and other Rhenish authorities. There are several idioms in Rhenish Snake Thread which perhaps represent the work of different 'chairs'; but I cannot discuss this matter here. There is no question of a Snake Thread 'artist'. It was a Semitic firm.

ENGLISH GLASS

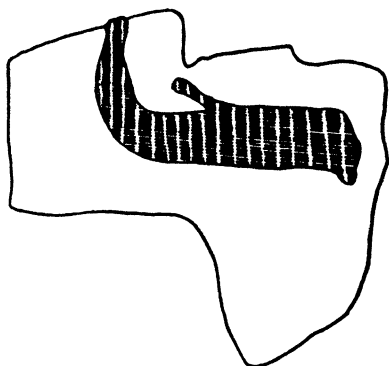


FIG. 2a.—Fragment of vessel, clear thin-blown ($\frac{3}{8}$ " glass, $2\frac{1}{8}$ " \times $1\frac{3}{8}$ "; trail in lemon-yellow coloured glass, cross-tooled. Found at Wroxeter. Snake Thread (Rhine) Ltd.; about A.D. 200. Shrewsbury Mus., No. F. 63.



FIG. 2b.—Fragment of vessel, clear thin-blown ($\frac{3}{8}$ " glass, actual size; trail in coloured-blue glass, cross-tooled. Found at South Shields. Snake Thread (Rhine) Ltd.; about A.D. 200. South Shields Mus., unnumbered.



FIG. 2c.—Neck and orifice of jug, clear thin-blown glass, height now $1\frac{3}{4}$ "; trail in bright blue-coloured glass. Found at York. Snake Thread (Rhine) Ltd.; about A.D. 200. Yorkshire Mus., unnumbered.

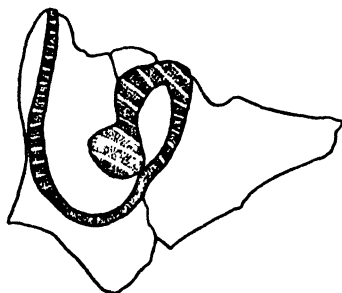


FIG. 2d.—Fragment of vessel, clear thin-blown glass, actual size, trail in bright blue-coloured glass, cross-tooled. Found at York. Snake Thread (Rhine) Ltd.; about A.D. 200. Yorkshire Mus., unnumbered.

THE NORTHERN APPROPRIATION

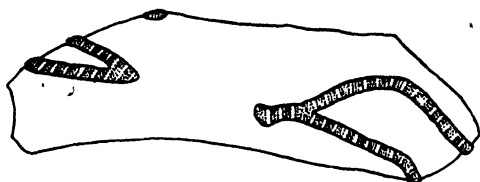


FIG. 2e.—Fragment of vessel, clear thin-blown glass, $2'' \times \frac{1}{2}''$, trail in bright blue-coloured glass, cross-tooled. From Roman villa at Darenth, Kent (Arch. Cant. xxii. p. 49). Snake Thread (Rhine) Ltd.; about A.D. 200. Rochester Mus., No. 468 (A. 1).



FIG. 2f.—Fragment of vessel, clear thin-blown glass, length $\frac{1}{4}''$, trail in bright blue-coloured glass (faintly cross-tooled). From Roman villa at Darenth, Kent. Snake Thread (Rhine) Ltd.; about A.D. 200. Rochester Mus., No. 468 (A. 3).



FIG. 2g.—Fragment of vessel, clear thin-blown glass, length $\frac{1}{4}''$, trail in bright blue-coloured glass, cross-tooled. From Roman villa at Darenth, Kent. Snake Thread (Rhine) Ltd.; about A.D. 200. Rochester Mus., No. 468 (A. 2).

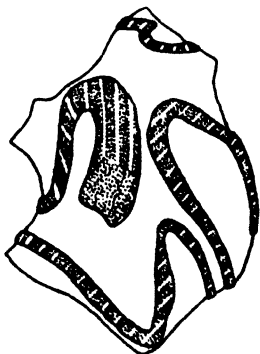


FIG. 2h.—Fragment of vessel, clear thin-blown glass, time uncertain, colour or colours of trail uncertain. Found at Caerwent, Mon., middle of 19th cent. Snake Thread (Rhine) Ltd.; about A.D. 200. Unidentified by J. E. Lee, *Isca Silurum*, 1862, Pl. XXVIII, No. 3, and p. 52. At one time in the Caerleon Mus., but apparently lost.

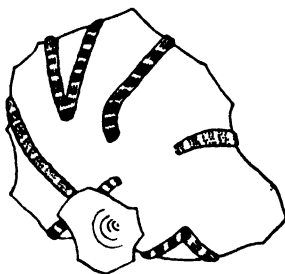


FIG. 2k.—Lower part of footed cup or bottle, clear thin-blown glass, height now $2\frac{1}{2}''$, trails in opaque white and in lemon-yellow. Found at Silchester. Snake Thread (Rhine) Ltd.; about A.D. 200. Reading Mus., unnumbered. (Seen from below.)

coloured glass cross-tooled, found at Wroxeter. Snake Thread (Rhine) Ltd.; about A.D. 200. Shrewsbury Museum, No. F.63.

(2) *Fig. 2b.*—Fragment of vessel, clear thin-blown ($\frac{1}{3\frac{1}{2}}$ in.) glass, actual size, trail in coloured-blue glass cross-tooled, found at South Shields. Snake Thread (Rhine) Ltd.; about A.D. 200. South Shields Museum, unnumbered.

(3) *Fig. 2c.*—Neck and orifice of jug, clear thin-blown glass, height now $1\frac{7}{8}$ in., trail in bright coloured-blue glass, found at York. Snake Thread (Rhine) Ltd.; about A.D. 200. Yorkshire Museum, unnumbered.

(4) *Fig. 2d.*—Fragment of vessel, clear thin-blown glass, actual size, trail in bright coloured-blue cross-tooled glass, found at York. Snake Thread (Rhine) Ltd.; about A.D. 200. Yorkshire Museum, unnumbered.

(5) *Fig. 2e.*—Fragment of vessel, clear thin-blown glass, 2 in. by $1\frac{3}{8}$ in., trail in bright blue-coloured glass, cross-tooled, from Roman villa at Darenth, Kent (*Arch. Cant.* xxii, p. 49). Snake Thread (Rhine) Ltd.; about A.D. 200. Rochester Museum, No. 468 (A.1).

(6) *Fig. 2f.*—Fragment of vessel, clear thin-blown glass, length $\frac{9}{16}$ in., trail in bright blue-coloured glass (faintly cross-tooled), from Roman villa at Darenth, Kent (as No. 5). Snake Thread (Rhine) Ltd.; about A.D. 200. Rochester Museum, No. 468 (A.3).

(7) *Fig. 2g.*—Fragment of vessel, clear thin-blown glass, length $\frac{3}{4}$ in., trail in bright blue-coloured glass, cross-tooled, from Roman villa at Darenth, Kent (as No. 5). Snake Thread (Rhine) Ltd.; about A.D. 200. Rochester Museum, No. 468 (A.2).

(8) *Fig. 2h.*—Fragment of vessel, clear thin-blown glass, size uncertain, colour or colours of trail uncertain (probably selfsame), found at Caerwent (Mon.) middle

PLATE VI



(a) *Three-cornered cup, concavity decoration, clear glass of black tone. S. Gaul or Seine-Rhine; 3rd century. H. 3¼". Yorkshire Mus. See p. 41.*



(b) *Cup, clear glass very slightly green. Found at Airlie (Angus). Rhensish; 3rd century. H. 2¼". Nat. Mus. Ant., Edinburgh, No. FQ. 150. See p. 39.*



(c) *Bottle, dark clear greenish glass with concavities. Found in Great Dover Street, Southwark. Seine-Rhine; c. 200 A.D. H. 6". Brit. Mus. See p. 41.*



(d) *Jug, pale-green clear glass; chain handle; NDW decoration. Found at Colchester. Seine-Rhine; 3rd century. H. 6½". Brit. Mus. See pp. 17 and 30.*

of nineteenth century. Snake Thread (Rhine) Ltd.; about A.D. 200. Unidentified by J. E. Lee, *Isca Silurum*, 1862, Pl. XXVIII, No. 3, and p. 52. At one time in the Caerleon Museum, but apparently lost.

(9) *Fig. 2k*.—Lower part of footed cup or bottle, clear thin-blown glass, height now $2\frac{1}{2}$ in., trails in opaque white and in lemon-yellow, found at Silchester. Snake Thread (Rhine) Ltd.; about A.D. 200. Reading Museum, unnumbered.

I must mention here two corollaries of Snake Thread, though it would be rash to connect either of them with that glasshouse. Small horizontal keg-bottles were made not infrequently in Rhenish and Gaulish glasshouses during the third and fourth centuries. They are similar in technique and in form to the German keg-bottle of the seventeenth century, with which all collectors are familiar. The Seine-Rhine keg was usually decorated at each end with a turnery thread vertical to the vessel and in selfsame or in coloured glass. There are several fine examples in the Bonn Museum, in the Boulogne Museum, and elsewhere. The type is familiar in England from several broken keg ends which have sometimes been mistaken for the vertices of cone-beakers of the fifth and sixth centuries. Such pieces are in the museums at Shrewsbury, Cambridge, and the Guildhall.¹

The Alexandrian glasshouses *understood colour*, and painting on glass was an Alexandrian technique; examples from *Oxyrynchus* date from the early Empire and are decorated in a retrospective Egyptian style.² Elsewhere the existing glasses or fragments fall into two main groups,

¹ Shrewsbury Mus. No. F. 62, from Wroxeter, end diam. $\frac{3}{4}$ in., lemon-yellow trail; Cambridge Arch. Ethn. Mus. (Webb Coll.), length now 3 in., bright-yellow trail and two small prunts, from Lidlington; Guildhall Mus. No. R.X/31, end diam. 1 in., coloured-blue metal with ring of yellow glass, but no other trail, from Lime Street.

² Kisa, p. 811.

Southern and Northern, occasionally alike in subject, but divergent in style. The Northern group is best represented by nine glasses or fragments recovered from Seeland graves at Varpelev (three),¹ Thorslunde (three),² Nordrup (two),³ and Himlingöie (one),⁴ and by the British fragments. The technique is still Alexandrian, but only one of them retains an Alexandrian trade subject, a bird pecking at a bunch of grapes.⁵ In two of them (Thorslunde) the subject—gladiators—is specifically Roman. In the remaining six examples from Seeland and in the four British pieces no trace remains of either of these themes. The subject, wherever it can be identified, is beast against beast—panthers, lions, bulls, bears, deer, and others. And although this kind of subject was suggested to the trade by the Roman circus, in mood and treatment we have left the circus behind. The pursuit in one of the Thorslunde fragments⁶ reminds one of Castor slipware, but it has more fury; and in the splendid cup from Nordrup one pair of grappling beasts⁷ is in the manner of the animal symplegma which came to Northern Europe from the 'Scythian' animal style. The taste of the market is now dictator of the 'shop' tradition.⁸

¹ *Ann. for Nord. Oldkyndighed*, 1861, p. 305, Pls. I-II; and Kisa, p. 823 and Fig. 350.

² *Aarbøger for Nord. Oldkyndighed*, 1871, Pls. X-XII; Kisa, p. 826 and Figs. 351-3; *Mem. Soc. Antiq. Roy. Nord.*, 1872-77, p. 59, Pls. XI-XII (colour).

³ *Nord. Fortidsminder*, i, p. 6 and Pl. I (colour); and Kisa, p. 828 and Figs. 347-348 a.

⁴ S. Müller, *Ordning af Danmarks oldsagers*, 1895, vol. i, Fig. 327; and Kisa, p. 830 and Fig. 349 (bad illus.).

⁵ Cf. the Khamissa cup, *Rev. Arch.*, 1874, pp. 281 seq. Pl. VIII; and see also Rostovtzeff, *Anc. Paintings from S. Russia* (in Russian), 1913-14, Pl. LIX, A, 1, 2, 4, 5.

⁶ Kisa's Fig. 351 is good enough.

⁷ Extreme right in Kisa's Fig. 347 a. For the manner compare e.g. Borofka, *Scythian Art*, 1928, Pls. 46-48.

⁸ With the Nordrup cup, and the Seeland beasts generally, compare the treatment of the beasts in the big silver *Humpen* (about A.D. 200) from Hildesheim (Pernice and Winter, *Hild. Silberfund*, Pls. XXXVIII-XXXIX).

The vessel usually chosen for such decoration was a cylindrical cup (Plate VI *b*)¹ with a foot-rim, a favourite shape of Rhenish glasshouses in the third century and one which occurs in the work of Snake Thread.² Some of their trailed work has the quality of knife-painting with a coloured trail for pigment, and between Snake Thread and the Seeland family there are resemblances of glass colour. It would be tempting to regard the painted glasses as another line of that firm, but all we can say with assurance is that they were made in the Northern taste by a Rhenish glasshouse which had Alexandrian experience in its colour department and Syrian gaffers at the chairs. The British fragments are as nice a bit of blowing as you could wish to see.

The most complete and the finest in colour and drawing is in the Lodge at Beaufront Castle (Northumberland).³ It is traced and described in Fig. 3. Almost the same panther occurs on one of the Nordrup cups and on the Himlingöie cup, but in both these glasses the blue is outlined in brown. The second British find is a rim-fragment at Chesters.⁴ Round the rim runs a spray of wreath-like foliage in bright yellow with bright blue detail. Below is the upper part of the head of a lion, the jaws open, but the lower jaw missing. The head is in bright blue with spots and other details in red, the mane in red with streaky touches of yellow, the eye in opaque-white. The head is partly defined by cutting through the enamels, but this

¹ Nat. Mus. Antiq. Scot. No. EQ.150, from Airlie (Angus), H. $2\frac{1}{2}$ in., top diam. $2\frac{1}{8}$ in., clear metal, scarcely tinged with green in two concentric foot-rims; *P.S.A. Scot.*, lxvi, 1932, p. 292 (J. Curle's 'Inventory').

² *Sammlung Niessen*, 1896, Pl. I, Nos. 11, 15; *Vom Rath*, Pl. XI, 98.

³ The true colours of the 'butter' can only be seen *through* the 'bread'. The exterior surface is faded.

⁴ Chesters Mus. No. 843, length of rim $1\frac{3}{8}$ in., H. $1\frac{1}{4}$ in., clear slightly olive-green metal, blown from $\frac{1}{16}$ in. to $\frac{3}{16}$ in. (at rounded rim), local find. From a cylindrical cup.

was probably done subsequently to trim the contour. The Traprain fragment at Edinburgh¹ shows a small portion of foliage. A band of bright-blue glass is apparently marvered into the side of the vessel and is painted over with single brushed lines in what is now purplish-black. There are also brush strokes in red and yellow. The fourth fragment is small and has dotted foliage. It is a Hadrian's Wall find and is in the possession of Mr. Eric Birley.

I pass now to the fourth century. During this period

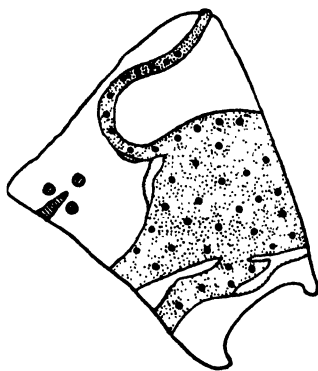


FIG. 3.—Fragment of cup, actual size, clear colourless thin-blown glass ($\frac{1}{8}$ "), decorated with the hindquarters of a panther in coloured enamels:

Body, legs, tail: bright blue.

Animal's spots: black.

Below tail and belly: opaque white.

Foliage stroke: red.

Foliage dots: duck-egg green.

Found at Corstopitum. Rhenish; 3rd cent. Beaufront Castle (Lodge) Mus., Northumberland. Unnumbered.

there is no essential change in style, but if the number and nature of the fragments are a guide, the Seine-Rhine houses suffered a drop in receipts from the British market. There is little glass in this country to correspond with the rich series of fourth-century work found at both ends of the glassfield itself. The fragments are not to be sorted here and several entireties have already been mentioned.

¹ Nat. Mus. No. XI, 14, 108, $\frac{7}{8}$ in. by $\frac{1}{2}$ in. On this, and the family, see Curle in *P.S.A. Scot., u.s.*

We may therefore turn to a glass which is the chief treasure of the Hospitium Collection at York. It is a fourth-century dropper or *Kuttrolf* (Plate V c).¹ The name *Kuttrolf* is German for *gutturium*, and a *gutturium* is a bottle with a very narrow orifice specially made for slow pouring and suitable for oil or perfume, or in modern times for whisky. Dr. Fremersdorf has pointed the connection by an interesting quotation from the fourth-century dictionary of Festus: '*gutturium: vas ex quo aqua in manus datur, ab eo quod propter oris angustias guttatim fluat*' (dropper: a vessel from which water is poured on to the hands, because on account of the narrowness of the mouth the water flows by drops).²

The form and technique of the dropper is best explained by reference to the late second-century bottle from Southwark (Plate VI c)³ and the third-century cup from York (Plate VI a).⁴ In the former the concavity decoration was done partly by suction, partly by squeezing the paraison with the pucellas or equivalent tool; the four concavities were done in relay pairs and are fairly small and shallow. In the four-cornered cup they are larger and deeper and the tips of the pucellas almost meet at the corners. In the middle of the York dropper they have met, and we have four vertical tubes clustered round a central tube.

This is a Syrian job. The shape was evolved in Syria—

¹ Bright leaf-green bubbly metal, H. 6½ in., diam. 4 in., ring punty-mark.

² *Archäolog. Anzeiger*, 1931, 1/2, col. 144 note.

³ Brit. Mus. (Cato Coll.), found in 1866 in Great Dover Street (Southwark), a thin-blown greenish glass. Probably Rhenish, about A.D. 200; the shape without concavities was done by Snake Thread (Rhine) Ltd.; see *Sammlung Niessen*, Pl. V b, 7; Pl. V, 6 (43-45). The neck type occurs at Lewes (from Bormer, Sussex) and at Maison Dieu (No. 503, local).

⁴ Yorkshire Phil. Soc. Mus., unnumbered, found in York, H. 3¼ in., 'zip-fastened' foot-rim, clear glass of very black hue. Two brothers at St. Germain, one from a Vaison collection (No. 13410). The shape was adopted from Syria; there is a Syria example at Sheffield Mus., H. 3¾ in., no foot-rim, in a collection formed in Asia Minor.

there exist a few Eastern examples of the second and third centuries¹—and was brought by Syrians to the Seine-Rhine glassfield. There are undoubted examples of Seine-Rhine manufacture.² Where, then, did the York Syrian work? The metal is a bright young-leaf green and very bubbly, more Syria than Seine-Rhine.³ The shape and the handles are most nearly matched in one of the Syrian pieces.⁴ But without the handles this dropper is matched fairly closely in the Niederauerbach dropper at Speyer.⁵ Its environment strongly supports the view that its Syrian maker worked in Seine-Rhine. It was found in the Roman cemetery near the new station at York, and the other glass and fragments found in York include a number of pieces of undoubted Rhenish manufacture.⁶ Such is a fairly general tendency down the east coast, from Orkney⁷ and East Scotland through Tyneside to York and Rochester and Maison Dieu. The dropper was not a very elegant model—Caranda and York are perhaps the best in design

¹ *Arch. Anz.*, u.s. Figs. 1-3.

² St. Germain (Caranda, Aisne, tomb 2114), Lantier, Pl. 35; St. Germain No. 41100 (Villa d'Ancy), *Arch. Anz.*, u.s. Fig. 8; St. Germain No. 41099 (Marle, Aisne), *Arch. Anz.*, u.s. Fig. 4; Liège Mus. (Tongern or Coningsheim), u.s. Fig. 6.

³ In the Syria pieces the metal tends to light green, in the Seine-Rhine pieces to dark green. It is probable that both cullet and frit were sometimes imported by Seine-Rhine from E. Medit.; Venice imported Syrian cullet in the thirteenth century (cf. Schefer, *Nassiri Khosrau*, 1881, p. 42 note). So also William of Tyre (12th cent.), *Hist. des Croisades*, ed. Guizot 1824, 2, 54, 13: *Ce verre, transporté de là [sc. Tyre] dans les provinces les plus éloignées, fournit la meilleure matière [i.e. frit] pour faire des vases de la plus grande beauté, remarquables surtout par leur parfaite transparence.*

⁴ *Arch. Anz.*, u.s. Fig. 1 and Fig. 2 (*Coll. de Clercq.*, vol. vi, Pl. 15, 321, from Farah).

⁵ Rademacher, *op. cit.* Pl. 10 c.

⁶ Snake Thread (above, p. 34); (2) coloured bird (above, p. 23); handle of cup, type Lehner, *Führer* . . . Bonn, Pl. XVIII, 4, right; a second handle analogous to the last; and several other pieces.

⁷ Nat. Mus. Scotland, No. EQ.97, Westray, base of colourless thin-blown ($\frac{1}{8}$ in.) bowl or cup, two concentrics; type fairly frequent, nearest parallel Cirencester Mus. No. 79.

—but it has an interesting posterity. In the East it begat the long-necked perfume-sprinkler of the sixteenth and later centuries. In the West its chief offspring are the spiral-necked *Kuttrolf* of German glass of the sixteenth and seventeenth centuries, and a square bottle which made its appearance in Germany about 1500 and is still familiar in England as a whisky decanter. Of this development Dr. Rademacher has given an admirable survey, to which the reader may be referred.¹

During the fifth and sixth centuries the Seine-Rhine industry confined itself more and more to drinking-glasses, a sign of aristocratic custom. Of these glasses the first characteristic is instability. It was said in the nineteenth century that glasses without feet were made to be 'drained at one draught' and that they showed 'the drunken habits of our Anglo-Saxon forefathers'. One suspects teetotal influence here. There is a drink on almost every page in *Beowulf*, and the Germans and Saxons had hard words from the Church. But this was not the cause of instability models. One cause was the prior existence of a few unstable glasses in the South. Another was the use of horns in the North. A third lies in the one-piece technique of Syrian tradition; not even Snake Thread can show a pretty bit of stem-and-foot work. But the chief cause was the *ceremonial* of hospitality in the North. The guest drank standing or without a table to rest his glass on. When the glass was empty the host or his family or his servants withdrew it from the drinker's hand and replaced it therein. Such is the procedure in one of the drawings of an Anglo-Saxon calendar in the British Museum.² Three noble

¹ *Die Deutschen Gläser des Mittelalters*, Berlin 1933, pp. 60-70, Pl. D and Pls. 10-13. There is an eighteenth-century example, black bottle-metal, H. 10½ in., sq. 4¾ in., at Moysey Hall, Bury St. Edmunds. Not certainly English.

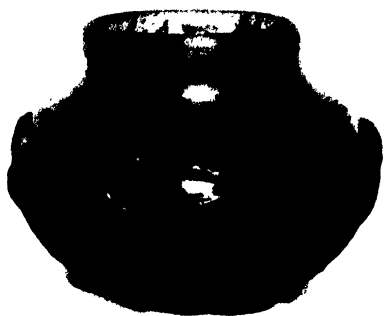
² Cotton MS. Julius A vi, figured by Akerman, *Remains*, 1855, p. 52.

figures are seated on the ale-bench engaged in civilised conversation, and two menservants are waiting upon them with unstable vessels of shapes which survive in glass (Plate IX *a*). The scene at parties was even more decorous, though no doubt it relaxed as the evening wore on: 'Once there, I went first to the ring-hall to great Hrothgar. Forthwith the famous son of Healfdene when he had learned my mind, allotted me a seat by his own son. The company was in high feather; never in my life have I seen greater joy at mead among sitters in hall under the vault of heaven. From time to time the illustrious queen, the nation's pledge of peace, went up and down the hall, kept the young servers going, and often gave a circlet to some guest ere she went back to her seat. Now and then before the high courtiers, Hrothgar's daughter bare the ale cup to the nobles from end to end. I heard those sitting in the hall call her Freawaru, as she presented the studded vessel to the heroes.'¹

¹ *Beowulf*, ll. 2010-23, trans. J. R. C. Hall, 1911, pp. 103-4. The poem contains no specific mention of *glass* drinking-vessels or of silver. The following names of drinking-vessels occur: (1) *Orc*, (2) *būne*. These are both stable models: *Him bigstóðan bunan and orcas | discas lagon*—by it stood bunan and orcas, dishes lay (l. 3047). (3) *Dryncfaet*, qualified as 'precious', *dtore* (l. 2254). (4) *Ful*, an unstable model and also 'precious': 'she, the diademed queen, ripe in judgment, bore the *medu-ful* to Beowulf'; *medu*=mead. (5) *Medu-scenc*, unstable, same use as last (ll. 1980-83). (6) *Waege* or *calu-waege*, qualified as: (a) 'precious' (*faetid*), (b) 'decorated' (linear ornament) (*hroden*), (c) *naegled sinc*, 'studded vessel'. All are unstable. *Hroden* is quite a general word, used, e.g. of a woman in finery. (See ll. 481, 495, 2021). In view of (a) glass heirlooms (above, p. 10), (b) the vessels shown in Julius A vi and instanced in finds, it is quite likely that these 'precious' vessels include glass as well as gold; pottery was hardly 'precious'. To Nos. (3), (4), and (5) above there seems to be no clue. *Hroden calu-waege* might apply to any *high-class* model which is decorated. The *cabochon* types being rare after 4th cent., the claw-beaker is the only glass vessel which could be described as *naegled sinc*; one England example has bosses in addition to claws; see p. 61. If the claw-beaker is *naegled sinc* the stress of the claw motive may be partly a development of grip facility in a vessel passed between host and guest. The grip is not complete as in the *tyg*, but hold is easier for two (cf. the *Römer*, grip facility for one). For a cone-beaker, spirally lined, in pottery see *Album Caranda*, NS, Pl. 83 (2), Villa d'Ancy.



(a) Bottle, 'dolphin' handles, trailed decoration. Rhenish; c. 200 A.D. H. $3\frac{3}{8}$ ". Wallraf-Richartz Mus., Cologne. See pp. 17 and 30.



(b) Bowl, dark-blue glass; NDW decoration. Found at Aylesford (Kent) in 1923. Seine-Rhine; 5th century. H. $3\frac{1}{8}$ ". Maidstone (Town) Mus. See p. 65 sq.



(c) Bottle, clear discoloured glass; neck spiral and merrythoughts. Found at Sarre (Kent). Seine-Rhine; 5th century. H. 5". Maidstone (K.A.S.) Mus. See p. 69.

It was a point of honour that the family should wait on their guest personally, and guest glasses ('the best service') were designed accordingly. When *Beowulf* was written, these glasses were precious because they were no longer obtainable. They had come down in the family with gold and horn. But in the fifth and sixth centuries, when they were still being made, it was a society like that of *Beowulf* that sustained the high-class glasshouses of Seine-Rhine and put money in the Syrian pocket.

Invasion glasses fall into three main groups—cone-beakers, claw-beakers, and miscellaneous. The cream of the cone-beakers was skimmed above (p. 15). Now come several cone models which are less developed in vertical elegance and about half a century earlier in date. The fifth-century Jutish graves at Westbere (Kent) produced a good example¹ of a commonplace model which is of frequent occurrence in Seine-Rhine. Another is the 'zig-zag' cone found on High Down (Sussex) and now in the Worthing Museum (Plate IX *d*).² *Décor* similar in idea and in execution occurs at Boulogne-sur-Mer³ on a stable beaker, and this beaker belongs to a well-attested fourth-century model which I have described as the father of the *Spechter*. In this glass there is a wide zone of zig-zag trail between the narrow zones which we see at Worthing. The High Down zig-zag was done about A.D. 400, and here, as

¹ Bubbly light-green metal with a narrow passage of horizontal trail in opaque-white glass just below the rim, no trace of punty-mark at vertex. H. 6½ in., orifice diam. 2½ in. This and the other Westbere glasses are in the custody of Mrs. Croucher, Walnut Tree Farm, Westbere, and in the possession of Mr. Osborn Dan, Watlingtonbury Place, Maidstone, by whose courtesy they are here noticed. The graves were opened by Dr. Ince of Sturry in 1931.

² H. 6½ in., clear metal (now much encrusted) with selfsame trail, no trace of punty-mark, knock-off rim (*i.e.* trail done on the blowing-iron).

³ Boulogne Mus. No. 2506, from Neufchatel (Pas-de-Calais), M-J, Fig. 263. The shape occurs at Vermand (M-J, Fig. 194), Mont Chypres, Oise (St. G. No. 14046), and other French sites. Snake Thread (Gaul) Ltd. used a closely similar model.

in several other Invasion cones which are not high-class, we must look to the glasshouses of 'Gaulish end'.¹

Similar zoning of the design may be seen in a cone in the Liverpool Public Museums,² but here the divisions are done by wheel-cut grooves. It is not very good cutting, but cutting of any kind is rare in the North after the fourth century. The upper zone is wide and blank. Then comes a narrow zone of blue oval patches, called by Mr. Morin-Jean *cabochons lisses*.³ Blobs of dark translucent coloured-blue metal were dropped on and marvered flush with the surface. The patch technique was frequent in stable glasses of the fourth century, and though this may be a late instance of it, the Liverpool cone can hardly be dated after 400, for we have two survivals in one glass. And we have A.D. 400 as an inceptional date for cone-beakers and for unstable models in general. The earliest are those in which the vertical accent is still undeveloped (contrast Plate IX *d* with Plate XIII *a*).

The second⁴ and broader of the two Guildown cones has not yet attained the vertical movement of its fellow, but it is far more effective as a design. The work is also better. The glass belongs to an interesting group of broad

¹ I do not know why Mr. Winbolt, *Wealden Glass*, 1933, p. 5, calls it 'Saxon "twisted" ale-cup'; *hroden* may refer to any kind of decoration. The *hroden ealu-waerge*, if they were of glass, were emphatically a high-class model (see p. 44). The High Down zig-zag is good fun, but no one could call it high class. High class means Plates XII *c*, XI.

² No. 6812 M (Mayer Coll.), H. 7½ in., clear metal blown thick. Only the top half survives, the rest being made up. It is apparently identical with a similar top half figured by Roach Smith, *Richborough, Reculver and Lymne*, p. 77, Fig. 66, and found at Richborough.

³ The blue-patch cone of M-J, Fig. 10 A is the only parallel I need cite here; French find, end of 4th cent. The technique is, of course, *Eastern* (Coll. Gréau, Pl. CXXII, 1-4 and 8, Saïda).

⁴ Guildford (Castle Arch) Mus., H. 9½ in., orifice diam. 3½ in., clear amber metal of good quality and in pristine condition, 23-line horiz. trail, eight vertical loops, punty-mark strong (*Surrey Arch. Coll.*, u.s. grave 56).

cones distinct in proportions from the Kempston group though differing little in actual width. It has brothers in Bavaria,¹ the Palatinate,² Norway,³ and North-eastern France⁴ and elsewhere in England,⁵ all of which show the same proportions, the same decoration, and sometimes the same rough punty-mark. Some of the broad cones still have a vestigial foot blob, and we may regard them as a transitional stage between the slanting but still stable beakers of the fourth century and the fully developed cone-beaker as it is seen in Kempston (Plate XIII c). Similarly the loops look back to Ennion, who had done by blow-moulding (*frontis.*, lowest zone) what is now done by a free trail; but they begin to anticipate a Kempston verticality. Here again is the trade responding to the market.

In a few glasses stability still survives, though the shape is rapidly approximating the cone-beaker. Two examples may be mentioned. One was found in the Jutish cemetery on Chessell Down (I.W.) in 1816 and is in the Carisbrooke Castle Museum.⁶ The metal is amber. The base is almost flat and $1\frac{1}{8}$ in. in diameter, while the diameter at the orifice is 3 in. The other example⁷ came from the famous Alfriston cemetery already mentioned. The base is square, the orifice circular. Each corner is marked by a thick notched

¹ Lindenschmidt, *heidn. Vorzeit*, v, 1902-11, i, Pl. VI, No. 109; found at Wenigumstadt (Bav.), green metal, H. $8\frac{1}{4}$ in.

² Kisa, Fig. 101 and p. 436, found at Deidesheim.

³ Almgren, Fig. 386, one of a number, more than 20, found in Norway and Sweden; H. $9\frac{3}{4}$ in.

⁴ Boulanger, *Cimetière . . . Marchélepot*, Pl. XII, 1.

⁵ Ashmolean Mus. (Evans Coll.), pale yellowish-green metal, very bubbly, H. $7\frac{1}{4}$ in., found at Faversham in 1872, 7 vertical loops, 10-line horiz. trail, punty-mark. Very poor specimen. The horiz. trail was done too soon and is fused in.

⁶ Drawings were kindly lent by Miss C. Morey. The beaker is broken, undecorated and without punty-mark; H. $6\frac{1}{8}$ in.

⁷ Lewes (Barbican House) Mus., H. $8\frac{1}{4}$ in., clear slightly green metal blown thin, four tall narrow concavities immediately above the base (*Sussex Arch. Coll.*, lvi, 1914, p. 44, grave 60).

trail which runs up from the base to within an inch or so of the rim. In this glass certainly, and perhaps in the Chessell beaker, we are still in the fourth century.

The undistinguished cone-beaker from Westbere (p. 45) and the 'zig-zag' cone at Worthing indicate a fifth-century date for two other cones where the decoration is more interesting. One of these glasses came from High Down¹ and is decorated with the arch trailing already noticed in the Dinton cone (p. 18). The illustration (Plate IX c) will indicate that the trail is now opaque-white. Originally the glass paste was duck-egg green and appears as such at one place where the trail has been marvered *under* the body metal, and so protected from discoloration. The pattern was formed by trailing the threads horizontally, combing them downwards to form arches, and finally marvering them flush with the surface. The same technique is evident in a cone-beaker of almost the same shape found at Bifrons (Kent) and now in the Kent Archaeological Society's Museum at Maidstone.² In both glasses the combination of combing and marvering represents a specifically Alexandrian process, which derived from the feathered bottles of 'old style' sand-core glassmaking in Egypt and occasionally reappears during the first five centuries A.D. These white marvered arches must be distinguished from those of the little Leicester beaker. There the date is about the same, but the arches are of clear golden-brown glass and stand out in unmarvered relief.

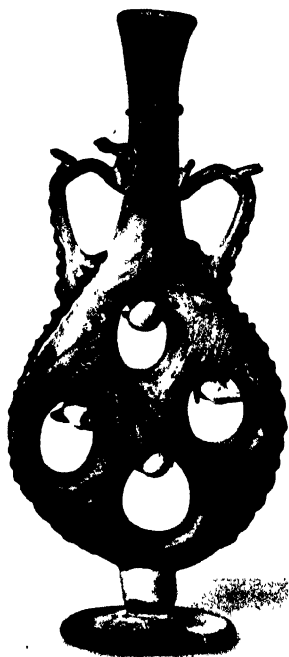
¹ Worthing Mus., H. 6½ in., clear glass much encrusted, punty-mark. Trails in duck-egg green paste occur in France.

² Found in 1867, Bifrons No. 269, H. 6½ in., orifice diam. 2½ in., pale olive-green metal (*Arch. Cant.* x, 1876, Pl. I and p. 302, grave 1). The trail here was in opaque-white glass, now much decayed. The Herpes cone (J. de Baye, *Cimetière . . . d'Herpes*, 1892, Pl. XXI, 130), the Brény cone (St. Germain No. 41102), and many other examples show the same pattern done by the same technique on the same variety of cone.



(a) Jug, blown onion body, drawn beak spout, transverse handle; clear blue-green glass. Found at Colchester. Seine-Rhine; late 2nd century. H. 3 $\frac{1}{2}$ ". Colchester Mus. See p. 21.

(b) Two-handled bottle; four holes worked during inflation, trailed and applied ornament (including four birds), opaque-white and blue-coloured glass. Seine-Rhine; 3rd century. H. 9 $\frac{7}{8}$ ". Wallraf-Richartz Mus., Cologne, No. 674. See p. 23.



(c) Jug, clear slightly greenish-blue glass, beak spout; handle and rim have pincer over-trails suggestive of a coxcomb. Found at Colchester. Seine-Rhine; early 3rd century. H. 5 $\frac{1}{2}$ ". Colchester Mus., No. 470 P. See p. 23.

Seine-Rhine gave both techniques a Northern accent by 'vaulting' the arches to conform to its own vertical shapes

The evolution of the cone-beaker reaches a further stage in a small group of glasses which show a growing awareness of the vertical theme, though they have not yet attained the mastery of Kempston. In the Linton Heath glass the cone form is elegantly waisted and movement is obtained by spiral wrything (p. 16). Glasses of the same kind have been fairly frequent in Northern French excavations, but there is no design more effective than Linton Heath. In England Linton Heath has few companions even in technique, and we are concerned mainly with a group which develop their vertical stress by a slimming of the broad cone and by the same decorative motives which were used for that model (see De Baye Pl. XIV, 2), loop trail and horizontal trail. And the metal is usually a light vivid green congenial to the lines of the vessel and more appropriate to wine¹ than to ale.

Among the precursors of Kempston, perhaps the most elegant was a nine-inch cone with a trumpet-shaped mouth found during the last century at Ozingell (Kent).² A small but not less successful glass was found at Alfriston.³ The cemetery on Guildown (near Guildford) produced an ambitious failure⁴ in clear light-green metal rising to a height of 9 $\frac{3}{4}$ in. The chair who produced this glass have made nothing of the trade model to which they are trying

¹ 'The song was sung, the gleeman's lay. Then mirth rose high, the noise of revelry was clearly heard; cup-bearers proffered wine from wonder jars' (*Beowulf*, ll. 1160-62; cf. ll. 654, 953, 1233, 1463).

² *Coll. Ant.* iii, Pl. III, 8 and p. 12; whereabouts uncertain.

³ Lewes (Barbican House) Mus., vivid light-green metal, 25-line horiz. trail and loops, strong clean punty-mark, H. 8 $\frac{1}{4}$ in.

⁴ Guildford (Castle Arch) Mus., 7 vertical loops with 1 left-over vertical line, 18-line horiz. trail, rim slightly everted (*Surrey Arch. Coll.* xxxix, 1931, pp. 1-50, grave 56).

to conform, and their trailing is too careless to intensify the shape of the vessel.

The climax of the development is reached in Kempston itself and in its four companions—High Down, Alfriston, Westbere, and London. The five of them have been described above (p. 15), and two of them are illustrated. The glasshouses of 'Rhenish end' were compelled to produce an unstable model at the end of the fourth century. They were breaking into an order of form entirely strange to their small manufacturer's world, though in glass history it was not unparalleled. They did not see at first what values in shape could be elicited from this new convention or what decoration suited it best. They spent most of the fifth century learning by experiment and rejection (Plate IX *c, d*). In the 'Kempston' quintette they succeed; and the degree of vertical accomplishment is the chief guide to date in earlier cones than these.

The claw-beaker is a different mood. Its metal is a swimming amber, a greenish yellow, or a deeper and darker green than we find elsewhere in glasses of the Invasions. Its distinctive feature has suggested several similes, not all as wieldy in use as they are vivid. I take claw-beaker as the general and most convenient name for the model, and distinguish the parts of the claw as lobe, shaft, and tip (Plate X). The claw-beakers, whatever their name, and perhaps because there are more names than one, belong to the gothic fancy which we have already met in the bird jugs at Colchester and in the Canterbury monsters. They were not always conceived as bird or beast, but the suggestion of organic form was the reason why they sold. And it is the reason why in the end the claw dominates the beaker (Plate XI *b, c*).

The blown claw began as an accident. I think the

accident occurred first in the North¹ and not among the Eastern Syrians. To see how it occurred one may turn first to the fully developed technique. The claw is the same in principle as the spout of a Murano cruet, and was made in the following way. The beaker was blown into the shape intended and while still on the blowing iron it was allowed to cool off. If it was to have trails as well as claws (Plate XI *a*), the trails were done at this stage.² When the metal was cool enough to resist inflation, a blob of fresh hot metal was dropped on the site chosen for the claw. The blob remelted a corresponding area of the vessel's wall and rendered that area susceptible to inflation. The gaffer at once resumed his blowing, and as his breath made a hole³ in the site and inflated the blob, the servitor thrust the end of a sharp tool into the expanding blob, hooked it outwards and downwards into a shaft, and finally pressed home the tip an inch or two below (see Plates). Throughout this action inflation was maintained. The desired and difficult thing was to give the lobe a good blown bulge and to keep the shaft hollow for as much of its length as possible (Plate XI *b*). The easy thing was to allow the hooking action to supervene too soon (Plate X *c*).

During the third and fourth centuries Seine-Rhine used the drop-on for studded decoration in fairly strong relief. Sometimes the drop-on was drawn down to form a shaft, a mean thin dribbling motive, but solid. On some occasion the cooling interval was misjudged and the servitor hooked his blob before the gaffer had finished blowing. Out came

¹ In view of the Andernach bowl, which shows the first stage of the evolution (*Bonner Jahrb.*, 1888, pp. 181-182, grave 9, Pl. X, 58, coin of Constantine the Great in grave). These claws are like very young icicles.

² The claw lobes often overlies the trail (Plate XI *b*); see also Fremersdorf in *W.-R. Jahrb.*, 1933/34, p. 19 and Fig. 17.

³ The site does not *split*; it simply becomes homogeneous with the dropped-on blob. Both then distend together.

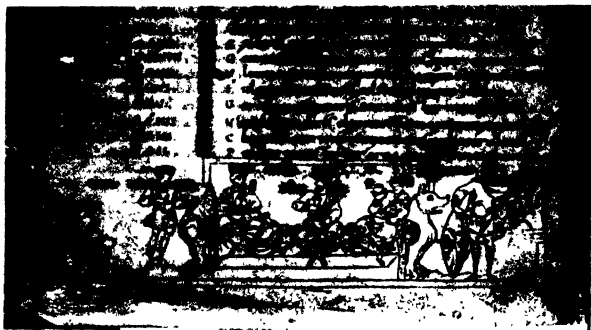
the blob as a blown bulge with a bit of the wall behind it. The accident had happened. It became a style only in the North. The claws do not give a full grip like the handles of the *tyg*, but they answered the etiquette of the mead hall, the passing of the glass from host to guest. The grip for two is excellent. For the Syrians who blew and sold them the claws were a sales trick. But what chiefly ensured their career was their appeal to imagination.

The miserable solid embryo claw seems to have made its appearance in the North about A.D. 300. We find it, for example, on a two-handled cup¹ which still clings to the Greek routine. In this well-known Merkens *kantharos* there is a claw on either side of the vessel, flanked by vertical strips of trailed glass. More usually the Syrians who intended a claw preferred a shape of their own, one of the little sedentary cups which I have previously mentioned. Several of these glasses have been found in the North and they are well represented by an example² from the Marne which has the slightly cupped rim and sharp knock-off thoroughly characteristic of the fourth century. Here are eight claws arranged in two tiers (as Plate XI *a*), but the chair are finding their sedentary cup rather short for so long an appendage. So the claw-makers abandon the sedentary cup for taller, straight-sided, stable beakers, where form and ornament are better suited to one another. Sometimes these beakers are short as beakers go,³ some-

¹ *Sammlung Merkens*, Pl. V, No. 1073, Prov. Mus. Bonn No. 17297, found at Kaltenengers (Koblenz). See also Fremersdorf, *u.s.* Fig. 1 (W-R *kantharos*, No. 28801).

² St. Germain Mus. No. 13357, H. $3\frac{1}{2}$ in., diam. $3\frac{1}{2}$ in., clear light-greenish metal, *Cimetières de la Marne*, Lantier, Pl. 19. Cf. Kisa, Fig. 143 (Rouen). An Eastern example, from Olbia, is in B.M. (bought, 1906), 8 coloured-blue solid claws alternating in two tiers. Not noticed by Fremersdorf, *W.-R. Jahrb.*, *u.s.*

³ *E.g.* Schmidt, *Glas*, Fig. 14 centre; Lehner, *Führer . . . Bonn*, i, Pl. XVIII, 4 left, found near Kreuznach, mid-Rhenish, one tier of four claws in vertical panels bounded by zig-zag trails.



(a) Drawing from a calendar, showing use of unstable models, probably including glass. English; c. 10th century. Brit. Cotton MS. Julius A VI. See p. 43.



(b) Stone coffin containing glass beakers and chain-handle jugs surrounding female skeleton, from 3rd-century burial at Beauvais. After W. Froehner, *La verrerie antique*, Le Pecq, 1879, frontis. See p. 32.



(c) Cone-beaker, clear greenish glass; horizontal arched trail of opaque duck egg glass, marvered-in and now white. Found at High Down (Sussex). Seine-Rhine; second half of 5th century. H. 6½". Worthing Mus. See p. 48.



(d) Cone-beaker, clear greenish gla. unmarvered turnery trail in zoned pattern with zig-zags. Found at High Down (Sussex). Seine-Rhine; second half of 5th century. H. 6½". Worthing Mus. See p. 45.

times they rise to the height of a lager-glass or a *Spechter*.¹ In both varieties the claw is used *horrore vacui* to fill vertical panels, and these are defined by a zig-zag trail in selfsame or in coloured metal. We find the same narrow zig-zags in bowls of the *cabochon* group² and therein we have a collateral reason for assigning the embryo claw to the fourth century. As a decorative motive it is not yet independent and its lobe is usually very flat. This last feature still persists in the earliest of the full-blown claw-beakers.

The vessel which eventually survived as the best vehicle for blown claws is a stable beaker of middle stature. It is common in the fourth century before it had grown claws, and may be visualised by thinking away the claws in Plate X *a*. Sometimes it has a short stem and foot blown all of a piece,³ sometimes simply a flat and rather narrow base. It may be undecorated, but the immediate precursor of the claw-beaker *shape* has a zone of horizontal trail below the rim, another above the base, a blank passage between;⁴ and that arrangement of trail persisted in claw-beakers as long as claw-beakers were made (Plate XIII *b*). The precursor shape was in full flourish about A.D. 400 and the birth of its heir follows immediately.

The signs of early date in the claw-beaker are thus a bundle of legacies from the immediate ancestry which I have described. They are evident where we should expect them to be evident, among the fifth-century Jutish

¹ *E.g. Ann. Soc. Arch. Namur*, vii, 1861, Pl. VII, 3 and p. 41, from Flavion, found with coins later than Constantine (A.D. 306-37), Namur Museum.

² *E.g. St. Germain Mus. Nos. 6284* (Châlons-sur-Marne, Lantier, Pl. 17) and 41045 (Brény); Beauvais Mus. No. V, 31 (local); Lehner, *Führer . . . Bonn*, i, Pl. XVIII, 4 centre; Lantier, Pl. 16 B, Brény tomb 1620, St. Germain Mus.

³ In a rather small size the Bekebourne beaker (Brit. Mus. No. 1925-7-7-2), H. 4½ in., is a good example. Cf. Fremersdorf in *W.-R. Jahrb.*, u.s., Fig. 16.

⁴ Brown, vol. iv, Pl. CXXI, 1 is a good example of a common type.

remains in Kent. We begin at Richborough with technical incompetence in a new job. The upper portions of two hollow-blown claws were found on this site and are now in the Richborough Museum. In one¹ of them the chair have failed to equate the inflational expansion with the area of the drop-on, though they have managed to keep their shaft hollow for what part of it now remains. The other² differs in the position of its discovery and the nature of its incompetence, and seems to have belonged to a different beaker. Part of the drop-on has been hooked to form a three-cornered patch covering a portion of the inflated area, but there is no attempt to blow and draw a proper claw. Such incompetence is not to be found elsewhere among the claw-beakers of England, and we may regard the two beakers represented by these fragments as the earliest of their kind. They are closely related to a beaker in the Niessen Collection at Cologne which has two tiers of eared blobs.³ Their manufacture may be assigned to the first half of the fifth century or a little earlier.

A hint of the same inexperience is still evident in certain glasses from Kent which carry other vestiges of the fourth century. I begin with an inelegant trio from Broadstairs, Ospringe, and Sarre which are obviously near relations. The Broadstairs beaker⁴ is more accomplished

¹ London Soc. Antiq., *Research Com. Repts.* vii, No. 76 [A], p. 52, and Pl. XXV, 76 left. Mus. No. 262; H. $2\frac{3}{8}$ in., W. $1\frac{3}{8}$ in., green clear metal.

² *Ibid.* No. 76 right; Mus. No. 221-1924; H. $1\frac{3}{8}$ in., W. $1\frac{1}{2}$ in. The Richborough Report (*ibid.* p. 52) has been misled by Kisa's errors (p. 486). Kisa is weak on these late families and died with his book unfinished. The Marne claw-cup (St. Germain No. 13357) is 4th cent., not 6th; see M-J, p. 226, and Lantier, No. 19. Its claws (eight in two tiers of four each, alternating) are solid and a simple matter of a hooked drop-on, as the tool-marks show.

³ *W.-R. Jahrb.*, 1933/34, p. 12, Fig. 6, hollow blobs, each with two ears. Cf. *Album Caranda*, Pl. XLV, 4.

⁴ Private ownership; exhibited in the offices of the Broadstairs Urban Council at Pierremont Hall, Broadstairs, H. $7\frac{1}{8}$ in., top diam. $3\frac{1}{8}$ in., base diam. $1\frac{1}{8}$ in. Pale bubbly sea-green metal running to bottle-green in the claws. Two bands of

than the others, but the design is still very conservative (Plate X *a*). The shape is the fourth-century beaker model which I have already mentioned, complete with its stable foot and its two bands of horizontal trail (Plate X *b*).¹ Strip the claws from Broadstairs and the likeness is evident at once; but in the waisting between the tiers we can see the claws creating their own vessel shape. The lobes of the claws are still rather flat. The hooking action has supervened too soon and the channels left by the movement of the hook in the metal are still painfully evident from the middle of the lobe to the hook-hole in the tip (see Plate X). In several of the claws the servitor has found himself with a surplus of metal at the end of his act; and this he has drawn back in an irresponsible thread which wraps the tip and lower shaft. In six of the eight claws only the lobes are hollow, but in the two others gaffer and servitor have managed to 'keep it long' as far as the middle of the shaft. It was the liquor in the shaft that amused the customers.

The metal and the shape and the work of brothers Ospringe² and Sarre³ suggest that they were made by

horizontal selfsame trail. Two tiers of four claws each; hook channels in lobes and shafts, hook-holes in tips, stable foot with punty-mark. Good condition, but cracked. Found in 1909 at Valetta House, Dumpton Park, Broadstairs.

¹ Worthing Mus., beaker from High Down (Sussex), H. 6 in., clear metal much encrusted, hollow-blown stem and foot, traces of two narrow bands of trail. The Rainham beaker found with a coin of Tetricus (A.D. 267-74) and in the Colchester Mus. (No. 347-28, H. 4½ in.) may be dated about A.D. 300 and is closely similar to that at Worthing. But Worthing has later features and may be assigned to the end of the 4th cent. Compare (1) Brit. Mus. No. 1925-7-7-2 (Bekesbourne); *Denkmäler*, I, Pl. 44 left (beginning of 5th cent.); *heidn. Vorzeit*, v, 1904, Pl. 23, No. 376 (Mainz, 4th cent.); St. Germain (Moreau Coll.), Brény grave 167 (beginning of 5th cent.).

² Maison Dieu Mus., not numbered, found at or near Ospringe, H. 6½ in., top diam. 3¼ in., base diam. 1 in. Yellowish amber metal, much encrusted. Two bands of horiz. trail (overlaid by the claw lobes); above, 11 lines; below, 10-11 lines. Foot squeezed out from cone vertex, pad foot applied, punty-mark (for the opening of the rim). Two tiers of four claws each, spacing very irregular.

³ Maidstone (K.A.) Mus. No. 264, found at Sarre, grave LX (*Arch. Cant.* vi,

the same glasshouse (Plate X *d*, *f*). It was not the glasshouse which made Broadstairs, but it worked about the same date and probably in the same vicinity. The 'brothers' show the signs of inexperience which we saw at Broadstairs. But the Bekesbourne beaker shape has changed beyond recognition, and the positive one-piece foot is replaced by an applied pad designed only to receive the lower claw tips. The claw-beaker has become virtually an unstable model, and we are in the middle of the fifth century.

The bag-beaker with claws (Plate X *c*)¹ also came from Sarre, and it is rare for a good reason. The same bag model, without claws, but with the trailed decoration which really belongs to it, is common enough both in England and on the Continent.² The panelling of the surface by thick trails is a late version of the decorative scheme which we have noticed in the Flavion *Spechter* and its fourth-century kind (see p. 53). On occasion it makes an effective decoration for a bag beaker, witness a lovely little glass at Canterbury.³ But it queers the pitch for claws. The gaffer and

1864-65, Pl. 5, 3). H. $7\frac{1}{4}$ in., top diam. $3\frac{1}{2}$ in., base diam. 1 in. Greenish-yellow amber metal. Two bands of horiz. trail (clear of claw lobes); above 8 lines; below 10 lines. Pad foot (without punty-mark) applied after opening of rim. Two tiers of four claws each, spacing irregular.

¹ Maidstone (K.A.) Mus. No. 263, Sarre, grave XXVI (*Arch. Cant.*, *ibid.*). H. $7\frac{1}{2}$ in., diam. $2\frac{3}{4}$ in., greenish-amber metal. Four vertical panels defined by four trails crossing at the vertex. Eight claws in four panels, two in a panel, claw above claw; only the lobes hollow.

² Brit. Mus. (Gibbs Loan) No. 1321-70 (pair from Faversham); Liverpool Mus. No. 6647 M (from Gilton, Kent); Almgren, Fig. 338 (Gotland); *heidn. Vorzeit*, v, 1911, i, Pl. 6, No. 105 (Trebur, Prov. of Starkenburg); Maidstone Town Mus. (Faversham). Bag-beakers with their own decoration last well into the 6th cent.; but not with claws.

³ Canterbury Mus. No. 5803, from King's Field, Faversham, H. 4 in., diam. $2\frac{1}{4}$ in. Golden-brown metal (like Reculver), rather bubbly. Five (apparently ten) trailed ropes descend to the vertex and turn back again to the rim; they form ten panels, of which the boundaries are alternately notch-tooled and plain. Trailed ring, overlying the rope-ends. Rim broken off.

servitor of Sarre are still empanelling their claws, *horrore vacui*, in the old fourth-century fashion, but they wish to have two tiers like other men. There the panel is their undoing, for it makes an overlap inevitable (see Plate X c). The rest of the industry soon realised that a triangular alternation was the scheme best suited to the claw motive. The bag-beaker from Sarre was an experiment which did not sell and was not often repeated. It is early in claw-beaker evolution. The lobes are the flattest in Kent and only the lobes are hollow.

A second pair of brothers may be said to conclude the first phase of the claw-beaker as we know it in England. One of them¹ was found at Westbere (Kent) in 1931 (see p. 45). The other² comes from Newport Pagnall (Bucks). At Westbere there is a marked advance both in metal and technique. The metal is a real *Waldglas* at last. The trail is done with precision. The claws are disposed with certainty, and though they start a little flat they soon swell to a wholesome bulge. This chair knew their job, but what is interesting is their design, and in their design three features. The claw men, we saw, began with a low or sedentary vessel which compelled them to distribute their claws over a small area. The effect of habit is still evident when they use a taller model. Early in the fifth century they will only try a single tier of four claws.³ Here

¹ Ownership and custody as above, p. 45. H. $5\frac{7}{8}$ in., diam. $3\frac{3}{8}$ in. Dark brown-amber metal, rather bubbly. Round the top a trail of 17 lines; round the lower part, 11 lines. Eight claws alternating in two tiers, a notch-tooled over-trail runs from lobe to tip of each claw.

² Brown-amber metal, slightly yellowish, not bubbly, ten claws (all hollow to within $\frac{1}{2}$ in. of tip) in two tiers, H. $6\frac{1}{4}$ in., diams. $3\frac{3}{8}$ in. and $1\frac{5}{8}$ in., notched over-trails, found at Newport Pagnall (Bucks) in 1899, Bucks County Mus. No. 3-05.

³ E.g. *Sammlung Reimbold*, Pl. 4, No. 735; H. $6\frac{1}{4}$ in., greenish metal. With this cf. *Sammlung Merken*, Pl. IV, No. 1014 (a similar beaker shape, trailed but clawless), and both with Westbere. It is easier to blow-up claws in the lowest

they have two tiers and eight claws, and sufficient command of process to turn their habit into an excellent design. The horizontal trail in the claw-beaker has often an air of superfluity. Here it is used with a conscious precision to maintain the squatness of the design. It is not used in the same way anywhere else in England. For a claw-beaker trail which is an essential of the design one must go to Bellenberg,¹ which has a similar squatness in a different shape, or to Cobern-Gondorf² where the trail carries its spiral movement the whole height of an elegant waisted beaker. Finally, the chair of the Westbere beaker know where they are likely to fail and they design accordingly. The unsightly hook-channels which we saw at Maidstone and Maison Dieu are masked by a notch-tooled over-trail, and before long the over-trail has become a decorative convention among claw-makers who have nothing to mask (Plate XI *b*). A comparison with its brother³ shows how firm and compact is the Westbere design. The chair at Newport Pagnall are using precisely the same appeals, but they miss the compact squatness. Their claws strike one as appendages needlessly multiplied.

The middle phase of the development has only two representatives in England, but both of them are master-

part of a vessel (*i.e.* part furthest from the nose of the iron) than higher claws like those in the upper tiers of Ashford and Vendel. This is a strong reason for regarding the latter glasses and their affinities (p. 62 *sq.*) as late in the development, and for regarding Reimbold type and its affinities as early.

¹ Froehner, *Coll. Charvet*, Pl. XXXII; pale-yellowish metal with brown-amber claws.

² Found in a grave at Cobern-Gondorf a.d. Mosel, H. 5 $\frac{3}{4}$ in. Six claws in two tiers, h. 15 cm. See *Bonner Jahrb.*, 1889, Pl. III, 10 and p. 24.

³ There are traces of other brothers: (1) Northampton Mus., one detached claw of golden-brown metal with notch-tooled over-trail in pale-green metal, 2 $\frac{3}{8}$ in. by 1 $\frac{1}{4}$ in., found in 1922 at Islip (Northants); it does not belong to the fragments of a wrythen cone-beaker exhibited with it. (2) The Fairford beaker, Ashmolean, H. 6 $\frac{3}{8}$ in., diam. top about 4 $\frac{1}{2}$ in., ten claws in two tiers, rather later than the others, and fairly complete.

pieces. I mean the famous beaker from Reculver¹ (Kent) in the Canterbury Museum (Plate XI c) and an equally famous glass found and preserved at Castle Eden,² Durham (Plate XI b). By the time we reach the Reculver glass at the beginning of the sixth century, the claw-makers have lost their prejudice that a beaker is one thing and that the claws which adorn it are another. The attributes have now become the essence, the beaker is entirely claw. Though it resembles nothing, it is alive.

The hook channels are still evident in the Reculver glass, and the upper trail is not very accurate, but otherwise the manipulation is as good as the design. The claws are hollow from lobe to tip, and those of the lower tier are drawn close in to the body to avoid splaying the lower part of the vessel. The chair who made the Castle Eden beaker are more expert, but they attain their effect without the same economy of means. Both trails are done with precision. The lower claws are drawn outwards *à jour*, the base being narrower than in the Reculver beaker. In the claws themselves, the blowing and drawing are masterly, volume being quickly attained without a sign of the hook channel.

¹ Canterbury Mus. No. 955, found at Broomfield in the parish of Reculver, in or before 1860, H. $6\frac{1}{2}$ in., diam. $3\frac{1}{2}$ in. Golden-brown bubbly metal. Round the top a trail of 10 lines, round the lower part 9 lines. Eight claws, *completely* hollow, in two alternating tiers; the lower tier clinging close to the body, the upper tier *à jour*; hook channels and hook holes evident, and a few traces of surplus metal. The base is a trailed foot ring, surrounding a kick and sheared flat below. Frequently figured, not always accurately.

² Property of Rowland Burdon, Esq., D.L., J.P., of Castle Eden. Found in 1776 (not 1802, as Brown, iv, p. 484) in a grave near the skull. H. $7\frac{1}{2}$ in. Green metal. Round the top, a trail of about 20 lines partly underlying the lobes of the claws; round the lower part, a trail of 11 lines. Eight claws in two alternating tiers of four; claws *completely* hollow; the upper tier has notch-tooled over-trails in light-blue coloured glass, the lower tier similar over-trails in dark-blue coloured glass. The upper tier was done first. Pristine condition. See *V. C. H. Durham*, i, 215. A brother of Castle Eden, found in the Rhineland, is in the Wallraf-Richartz Mus. at Cologne, and is twice figured, in error, by Kisa (Pl. XII and Fig. 151).

This fact, and the use of a coloured metal, make it clear that the over-trail was a convention and an opportunity, especially if you had a pot of colour on hand. There is, too, a certain virtuosity in the crowding of the claws in each tier. Such boisterous clawhood suggests a later phase of the Reculver model, a date in the middle of the sixth century.¹

The third phase of the claw-beaker is marked by a gradual growth in the stature of the vessel—in sympathy with the same tendency which we have noticed in the cone-beakers. The cone-beaker did not attain its full verticality until the closing years of the fifth century, and for this reason we may regard Phase III as a later overlap of Phase II. In Phase III the claw never dominates. The development is in the form of the beaker, and all the claw does is to keep pace with it.

Among the claw-beakers of vertical tendency there are several handsome glasses. Gilton and Wickham strike one as having been the best. But on the whole the adherents of Phase III try to combine and fail to reconcile two ideas in design which were glasshouse currency at the time. They miss both the elegance of the Kempston cone and the splendid agony of Castle Eden. In the beaker from Gilton (Kent) now at Liverpool (Plate XII c)² we find the

¹ Only in this connection, I think, is it relevant to mention the famous claw-beaker from Douvrend in the Rouen Mus. (J. B. D. Cochet, *Normandie souterr.*, 1855, p. 399 and Pl. X, 1). It is a short model similar to Reculver and Castle Eden, but of different shape and metal. The claws are excellent in blown volume—they project one inch at the lobe—and have selfsame over-trails. In technique, and probably in date, this piece is intermediate between Reculver and Castle Eden. H. $4\frac{7}{8}$ in., diam. $2\frac{1}{8}$ in.

² Liverpool Public Mus. No. 6073 M (Bryan Faussett Coll.). Found by Faussett at Gilton, grave 83 (*Inv. Sep.* Pl. XVIII, 2). H. 8 in., top diam. $3\frac{1}{2}$ in. Dark-green metal, very slightly amber toned. Trails: top, 5-line; middle, 5-line; base, 6-line. Originally six hollow claws in two alternating tiers of three; upper tier *d jour*, lower tier set close. Foot-rim trailed slightly above the vertex; punty-mark. Broken and restored (one claw missing).



(a) *Claw-beaker, pale bubbly sea-green glass, running to deep bottle-green in claws. Found at Valetta House, Dumpton Park, Broadstairs. Seine-Rhine; 5th century. H. 7 $\frac{1}{4}$ ".* Offices of Broadstairs Urban Council (*loan*). See p. 54.



(b) *Stem-beaker, clear bubbly glass, blown in one piece, two hands of self-same trail. Found at High Down (Sussex). Seine-Rhine; c. 400 A.D. H. 6".* Worthing Mus. See p. 55.



(c) *Claw-beaker of bag form, greenish-amber glass, eight claws in four vertical panels formed by trailed cordons below band of spiral trail. Found at Sarre (Kent). Seine-Rhine; middle of the 5th century. H. 7 $\frac{1}{2}$ ".* Maidstone (K.A.S.) Mus. No. 263. See p. 56.



(d) *Claw-beaker, yellowish-amber glass. Found at or near Ospringe (Kent). Seine-Rhine; middle of 5th century. H. 6 $\frac{1}{4}$ ".* Maison Dieu Mus. See p. 55.



(e) *Claw-beaker, yellowish-brown-amber glass, ten claws with notched over-trails. Found at Newport Pagnall (Bucks), 1899. Seine-Rhine; end of 5th century. H. 6 $\frac{1}{4}$ ".* Bucks. County Mus., No. 3-05. See p. 57.



(f) *Claw-beaker, greenish-yellow-amber glass, eight claws in two tiers. Found at Sarre (Kent). Seine-Rhine; middle of 5th century. H. 7 $\frac{1}{4}$ ".* Maidstone (K.A.S.) Mus. See p. 55.

most elegant body among the claw-beakers of England. This chair are not so obsessed with claws that they forget the undulation of their blown shape. They have produced the nearest counterpart we possess to the Cobern-Gondorf masterpiece. The upper part has the same trumpet form as in that glass and the trail is not less effective. Its thread fails at the waist, but it is beautifully spaced, and zoned with a fine sense of the shape of the vessel. Of claws there are only six, but this is not earliness, it is art. The claws themselves have volume in the lobe, the hall-mark of a good claw, and they maintain their hollowness well into the shaft. The Gilton chair, if we may judge by the stage of their technique, were closely contemporary with the makers of Reculver. They differ in what they are about. Here alone is there no sense of collision between decoration by claw and a shape conceived vertically.

The later development of the third phase is illustrated by three glasses at the British Museum which show a growing sympathy with the cone-beaker. The earliest and the most successful in design comes from Wickham (Kent) and is of blue-coloured metal (Plate XII *a*).¹ There is no doubt that the chair were proficient in technique, and the metal they use is of excellent quality. What is interesting is their hesitation in the matter of design. They would be radical, but their habits of work are conservative. Their idea of a claw-beaker is a trumpet model like Gilton or Bellenberg or Cobern-Gondorf, but they have seen, and perhaps made, glasses on Kempston lines. So they make their body taller and straighten its sides, consoling themselves with an everted rim and a rounding of the base. Their compromise is not unsuccessful, but it has trouble in

¹ Clear dark-blue coloured metal, H. 7½ in. Six claws, hollow well into the shaft, in two alternating tiers; above each of the lower-tier claws is a hollow-blown boss. See *Arch. Cant.*, xvii, 1887, p. 8.

store for them when they come to decoration. According to the habit so well realised at Westbere (Plate XI *a*) they are still massing their claws round the lower part of their vessel, but when the last tip has been thrust home they find three aching voids between the lower claws and the rim-trail (see Plate XII *a*). The voids are too short for claws, so three hollow bosses¹ are blown instead.

The problem is more acute in the Ashford beaker,² where the vessel is two inches taller and the sides are dead straight. The chair have forgotten the trumpet model and they know by experience what they are in for. Instead of improvised bosses they plan three tiers of claws to cover the entire surface below the rim-trail; but the shafts of the top tier have to be abbreviated so that they may not overlie the lobes of the bottom tier. The result, to my eye, is not a success. The claws mask the vertical slimness of the shape and put nothing in its place but an array of appendages. One sighs for Reculver, the maximum of clawhood with the minimum of claws.

The history of the claw-beaker in England ends at Taplow³ with a magnificent failure. These men are so addicted

¹ The technique is the same as that of the claw, but the hooking action is omitted. The tail of the drop-on can be seen in the illustration. The bosses may be compared with their converse, the internal suctional bosses of sixteenth- and seventeenth-century German glass.

² Brit. Mus., found at Ashford (Kent), H. 9 $\frac{3}{8}$ in., top diam. 3 $\frac{1}{2}$ in., base diam. 1 $\frac{3}{4}$ in. Yellowish-green metal. Twelve claws in three tiers of four each; claws well lobed, and hollow well into the shaft. Rim-trail of 13-14 lines; lower trail of 14 lines. Damaged. See Roach Smith in *Inv. Sep.*, p. xlvii, illus.

³ Brit. Mus., found at Taplow (Bucks) in 1883 in the grave of an aristocrat (*J.B.A.A.*, xl, 1884, p. 61). Sage-green metal with a tinge of yellow. Eight claws (hollow blown for half their very long shafts), in two tiers of four each; notch-tooled over-trails from lobes to tips in selfsame metal. Rim-trail of 14 lines with notch-tooled rope below; lower trail of 16 lines. Almost undamaged; three others were found in the same grave in fragments. For a brother in blue metal, quite possibly from the same glasshouse, see Schmidt, *Das Glas*, Fig. 16, in the *Völkerkunde-Mus.* at Berlin, found at Nettersheim in the Eifel Mountains. Another brother, in yellowish-green metal, was found in a seventh-century

to the fashion that they produce not a claw-beaker, but a cone-beaker with claws. Their vessel is straight and slim and more than a foot high. They have learned more ways than one of redeeming their initial error. The third tier of claws is replaced by a thick notched rope filling the space between the rim-trail and the upper lobes. The claws are flat, not of necessity but in conformity with the shape of the vessel. The over-trail is a godsend, enabling them to eke out the lower part of the vessel and to dispense with a third tier of claws. But it is an easy way out. This vessel could carry three tiers of claws, as its Ashford predecessor could not, and three tiers there are in its brother from Vendel (above, note).

So much for cone-beakers and claw-beakers. The remaining vessels of the Invasion period do not reach the same distinction, and I shall notice them in a more general way, beginning with those which show a lingering attachment to the shop tradition of Alexandria. A trade model called *clochette* by the French, was in great favour at the Gaulish end of the field, but has been found much less frequently elsewhere. These bell-cups, as we may call them in English, are unstable drinking-glasses and were made in two main varieties. The less ambitious kind is pointed at the vertex and makes little play with the curves of its profile. The England examples are few and insignificant and I need only mention a cup from Sarre in the Maid-

grave at Vendel (Uppland); it has three tiers of claws, and instead of the single rope of Taplow a zig-zag trail between two such ropes (Montelius, *Kulturgesch. Schwedens*, Fig. 413, and Almgren, Fig. 387). A third brother, like Vendel in design but blue in metal, was found in Gotland and is in the Stockholm Mus. (No. 10928). These find-spots suggest a glasshouse on the lower Rhine working rather before A.D. 600. Are Ashford (three tiers) and Wickham (blue) its earlier work? A Scandinavian market, with its taste for tall slim shapes, would account for the designer's dilemma described above.

stone Museum.¹ The elements of form in the second type, the bell-cup *par excellence*, are a trumpet and a dome: the trumpet is, of course, the upper part, while the inverted dome replaces the vertex. The shape is a Seine-Rhine creation, owing something to carinated pottery,² and makes good use of the contrast of curve which its elements afford. Such bell-cups have been found by the dozen in the north of France and were clearly a good seller at that end of the glassfield. The chief tendency in form is to reduce the dome and to develop a taller and more slender trumpet. And if the evolution of form in cone-beakers will serve as analogy, the earlier bell-cups are those in which the dome is still paramount. Of these there could be no better representatives than the bell-cup found at Woodnesborough³ in the eighteenth century, or a little beauty discovered more recently at Westbere.⁴ The dwindling of the dome and the domination of the trumpet may be seen at Cambridge in a bell-cup from Mitcham,⁵ a vessel of indifferent metal, but almost as elegant in form as one of Messrs. Appenrodt's lager glasses. Here again is the vertical idea in design.

Occasionally bell-cups of both kinds are decorated with an unmarvered trail of the same metal.⁶ The horizontal trail is common enough. Both features belong to the domin-

¹ K.A.S. Mus. No. 268, H. $3\frac{1}{2}$ in. This is a 5th-cent. piece; see below, p. 65. This glass had originally marvered trails at top and bottom, but the trail has disappeared, leaving only its channel.

² Cf. a glass cup at Boulogne, No. 2482, local find, 3rd cent., M-J, Fig. 178. This is a good example of the stable prototype of the unstable bell-cup.

³ Akerman, *Remains*, Pl. XVII, or Brown, *Arts in Early Eng.*, iv, Pl. CXXII, 2. I do not know what has happened to this admirable cup. In 1855 it was in possession of a Mrs. Harrison of Sandwich (Kent).

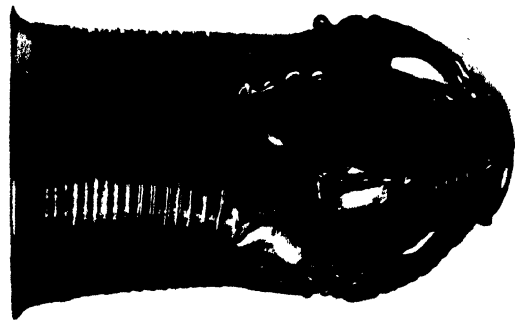
⁴ Custody and ownership as above, p. 45. H. $3\frac{1}{2}$ in. Olive-yellow metal with opaque-white trails (unmarvered) at top and bottom of the trumpet.

⁵ *Archaeologia*, ix, p. 53, Fig. 4.

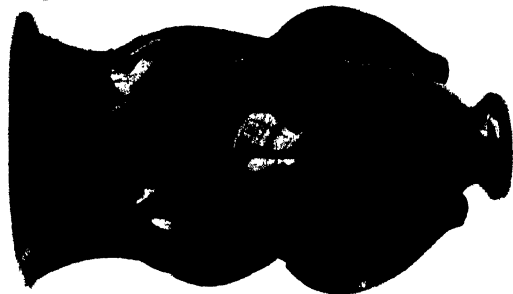
⁶ One of the glasses from the Herpes (Charente) cemetery is a good example (Brit. Mus. *A-S Guide*, Fig. 192 d).



(b) Claw-beaker, clear greenish glass, eight claws in two tiers; notch-tooled cover-trail in coloured-blue glass. Found at Castle Eden (Co. Durham), 1776. *Saane-Rhine*; early 6th century. H. 7½". Rowland Burdon, Esq., D.L., J.P., Castle Eden. See pp. 58-60.



(a) Claw-beaker, dark brown-umber glass, rather bubbly, eight claws in two tiers. Found at Westbere (Kent), 1931. *Saane-Rhine*; second half of 5th century. H. 5½". Custody of Mrs. Croucher, Walnut Tree Farm, Westbere. See pp. 57-58.



(c) Claw-beaker, golden-brown bubbly glass, eight claws in two tiers. Found at Reculver (Kent) before 1860. *Saane-Rhine*; c. 500 A.D. H. 6½". Canterbury Mus., No. 955. See pp. 58-60.

ant Syrian tradition of the Seine-Rhine glasshouses. But the bell-cups have the further interest that they represent an Alexandrian element which lingered in the Northern glasshouses at least as late as A.D. 500. Large numbers of them are decorated with trails of opaque-white glass. These trails are frequently marvered in. And they are combed into the arch festoons which we have noticed in cone-beakers (Plate IX*c*) as an 'old style' feather pattern with a Northern accent lately acquired. If you had been brought up on the Alexandrian 'side' you marvered your trails by instinct. The Alexandrian tricks¹ are abundantly illustrated in the bell-cups of Northern France, but much less frequently in England.² Bell-cups of any kind are rare in this country. The Jutes and Angles and Saxons on their way across did not pass the glasshouses of the Gaulish end which specialised in this model. As for date, the pointed bell-cups belong to the fifth century, and so also do those where the habit of marvering is strongest. Bell-cups which are free from opaque-white trail or are slender in design belong mainly to the sixth century. Of this tendency the Mitcham cup is representative.

A recent discovery in Kent has provided interesting evidence that Alexandrian technology was still understood in Seine-Rhine glasshouses as late as the fifth century. The Alexandrian branch of the industry specialised in coloured glass pastes, and in a group which I shall call the Aylesford family we find a heavy coloured glass of Alexandrian character combined with a decorative treatment

¹ The terminal button is characteristic of both the pointed bell-cup and the bell-cup of the dome-and-trumpet variety. This button may be round or twisted and is an inheritance from sand-core terminals.

² Maidstone (K.A.S.) Mus. No. 261. From Sarre. Bell-cup of the pointed variety, H. $4\frac{1}{2}$ in., diam. $3\frac{1}{8}$ in., with two bands of horiz. trail above a circuit of combed arches, the decoration all in opaque-white glass. Cf. *Arch. Cant.* x, 1876, p. 314, Pl. II, and Lantier, Pl. 29.

which is specifically Northern.¹ The bowl shown in Plate VII *b* was found at Preston Hall, Aylesford, in 1923, and is now in the Maidstone Town Museum.² It is one of a pair, of which the other twin is slightly damaged. The decoration consists of a thick trail 'nipt diamond ways' and forms under the base a seven-petalled rosette with the punty-mark in the middle. The bowl is made of a dark-blue pasty glass blown very thick and almost opaque; and it is extremely heavy for its size. A fragment of the broken twin gave the adjoining analysis,³ and with it I give for the sake of comparison the well-known 'uranium analysis' of a piece of pale-green mosaic glass from the Posilipan Villa at Naples.⁴

Three other members of the Aylesford family seem to have been found in England. The bowl from Broomfield (Kent) is a little smaller, but is otherwise identical in shape, metal, and decoration.⁵ Two others of rather different character were found during the last century in front of the Episcopal Palace at Cuddesdon.⁶ They were described as of pale-blue transparent glass and are similar in shape, though not a pair. The second ⁷ of them has trailed and nipped decoration, but the effect is rather one of three horizontal zig-zags than a diamond diaper like Aylesford. The decoration of the first Cuddesdon bowl⁸ consists of a

¹ For NDW decoration of this type on glass indubitably Northern cf. (1) the Bingerbrück drinking-horns (Brit. Mus. *A-S Guide*, Fig. 192 *e*); (2) *Vom Rath*, Pl. IX (mid-Rhine drinking-horn); (3) the Öland bowl (Almgren, Fig. 384 and Montelius, Nat. Mus. Stockholm, *Guide*, 1887, Fig. 111).

² H. $3\frac{3}{8}$ in., diam. at middle $4\frac{1}{8}$ in.

³ This was kindly made for me by Mr. F. W. F. Arnaud, F.I.C., Public Analyst for the County of Kent, through the courtesy of Mr. Norman Cook, of the Kent Archaeological Society's Museum.

⁴ *Archaeologia*, LXIII, 1911-12, p. 107.

⁵ Brit. Mus. No. 94-12-16-18, H. 3 in.

⁶ *Archaeol. Journ.*, iv, 1847, pp. 157-8, and illus.

⁷ Akerman, *Remains*, Pl. VI, No. 2.

⁸ Akerman, *Remains*, Pl. VI, No. 1.

THE NORTHERN APPROPRIATION

<i>Aylesford (dark blue)</i>		<i>Posilipo (green)</i>	
Silica	63.50	Silica	62.11
Lead (PbO) . .	0.49		
Copper (CuO) . .	0.30		
Manganese (MnO ₂) . .	0.19		
Iron (Fe ₂ O ₃) . .	1.28	Iron	2.70
Alumina (Al ₂ O ₃) . .	1.24	Alumina	1.76
Cobalt (Co O) . .	0.20		
Lime (Ca O) . .	7.04	Lime	8.90
Soda (Na ₂ O) . .	26.12		
	<hr/>	Potassium oxide . .	20.38
	100.36	Magnesia	2.90
	<hr/>	Uranium oxide . .	1.25
			<hr/>
			100.00
			<hr/>

A blue piece from Posilipo contained 4.2 per cent cobalt, but a complete analysis was not given. Composition similar.

band of ordinary horizontal trail below the rim with radial-vertical loop trails round the base. It isolates its possessor from the other members of the Aylesford family, but it also connects that family with a much larger group of continental bowls¹ and eventually with the 'merrythought' bottles to which I shall come in a moment.

So far as shape is concerned, the Aylesford twins are descended from one of the prettiest models of the first and second centuries, the rib-and-ribbon bowl.² To sub-

¹ *Vom Rath*, Pl. X, 93 (lower Rhine); *heidn. Vorzeit*, I, xi, Pl. VII, 3, 5 (Oberolm, near Mainz); the York bowl in the Yorkshire Mus. (Brown, iv, Pl. CXXV, 3); a bowl at Cambridge labelled T.O.; a fragmentary bowl from Islip in the Northampton Mus. (horiz. trail with irregular loops below); Boulogne Mus. No. 721 (local, M-J, Fig. 156); Douglas, *Nenia*, Pl. V. 7 (Chartham Downs, Kent); Boulanger, *Cimetière . . . Marchélepot*, Pl. XIII, 1 (whence to the 'merrythought' family). There are, of course, many other examples.

² The type called *Fadenbandgläser*. Examples Brit. Mus.

stantiate this statement would require an account of some twenty intervening glasses, and I have no space here for such a genealogy. In the earlier stages of its career the ribbon-and-ribbon bowl is an amalgamation of the two 'sides' of the ancient glass industry, and of such amalgamation it is the best example that we possess. From Alexandrian 'old style' it inherits its colouring, its wavy pattern, and the marvering of its ribbon, but it is informed by a thin-blown elegance of which only the Syrian was capable. It was the Syrian who took a leaf from the Alexandrian book, not the Alexandrian who learned to blow. As the influence of 'old style' waned, the bowl tends to lose its ribs and its ribbons. These things were replaced by flat broad flutings terminating a little below the rim,¹ but the identity of the vessel is still maintained as late as A.D. 400.² Then, in the Seine-Rhine glasshouses, the moulded pattern of the South is done by the free trail of the North—so we see it in the radial-vertical loops of the first Cuddesdon bowl, the York bowl, and others of their kind. In the last stage this formality is lost. The Northern glasshouse which produced Aylesford still cannot escape the traditional shape, but the pattern 'nipt diamond ways' is a linear theme of its own. For this reason the first Cuddesdon bowl may be assigned a rather earlier date than its fellow and an earlier date than the other members of the Aylesford family. The others are probably of the late fifth or sixth century and they have an interesting posterity. A lower and broader form of the Aylesford bowl was still made in early mediaeval times in metal of a different character, but with decoration which still remembers the Aylesford pattern.³ And NDW

¹ E.g. Ashmolean No. 1927-1888 (Kuklia).

² Lewes Mus., bowl from the Alfriston cemetery, grave 28.

³ Rademacher, *Die Deutschen Gläser des Mittelalters*, 1933, Pl. 31 c (Diocesan Mus., Limburg-a.L.) (light-green metal). Cf. *ibid.*, Pl. 31 d, where the trails are crossed, not 'nipt'.

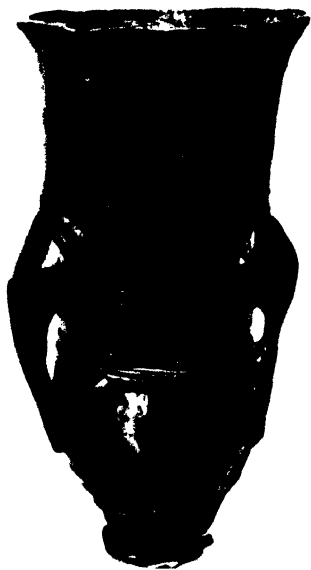
PLATE XII



(a) *Claw-beaker, coloured-blue glass, six claws in two tiers with three hollow-blown bosses (originally) above. Found at Wickham (Kent). Seine-Rhine; early 6th century. H. 7 $\frac{3}{4}$ ". Brit. Mus. See p. 61.*



(b) *Claw-beaker, clear yellowish-green glass, twelve claws in three tiers of four each (originally). Found at Ashford (Kent). Seine-Rhine; first half of 6th century. H. 9 $\frac{3}{4}$ ". Brit. Mus. See p. 62.*



(c) *Claw-beaker, dark clear-green glass, six claws in two tiers. Restored. Found at Gilton. Seine-Rhine; beginning of 6th century. H. 8". Liverpool Public Mus. See pp. 60-61.*

decoration, not dissimilar from that of Aylesford but on a bowl of quite different shape, has been found in a grave at Birka assigned to the ninth century.¹

Among minor glasses of the late fifth and sixth centuries the merrythought² family are perhaps the prettiest (Plate VII c). The example illustrated comes from Sarre (Kent)³ and is exquisitely done. The vessel itself is nicely blown and the adaptation of the trail to its shape is more successful than in other members of the family.⁴ The trail starts below the rim and descends the neck spirally, becoming thinner as it does so, and finally running into the merrythought design. The merrythoughts were done by a series of festoon trails, each trail thick at the drop-on and thinning towards the drop-on of its successor. The trails do not cross under the base, and so the bottle seems to be reposing in a flower of six petals or in the gentle squeeze of a starfish. It owes everything to the Northern genius for avoiding an exact horizontal. Its merrythoughts have direction without position and they lean the same way as the spiral line. The trailers of York and Cuddesdon stuck to the old classical loop trails and probably worked in the fifth century. The makers of the Northampton bowl and the Boulogne bowl

¹ Rademacher, *op. cit.*, Pl. 31 a and p. 100 (Museum of History, Stockholm).

² The trail motive resembles the 'merrythought-bone' of a chicken; and some name they must have.

³ Maidstone (K.A.S.) Mus. No. 265. Found at Sarre in or about 1863. Clear brown-amber metal (now much encrusted) with selfsame trail. Light punty-mark. H. 5 in., diam. 3½ in.

⁴ These are: (1) Twin of Sarre No. 265, also at Maidstone; (2) Brit. Mus. No. 54-10-23-1, from Bungay (Suffolk), clear pale-green metal in good condition, seven merrythoughts, H. 5 in.; (3) Liverpool Mus. No. 6115 (Bryan Faussett Coll.), pale sea-green metal of good quality, selfsame trail, from Kingston Down (*Inv. Sep.* Pl. XVIII, 1), H. 4½ in.; trail pattern slightly different from Sarre; (4) *ibid.*, No. 6583, rougher metal than the last, selfsame trail, from Barfriston, Kent (*Inv. Sep.* Pl. XVIII, 3), H. 4½ in.; (5) Ipswich Mus., brown-amber metal, Hadleigh Row, Ipswich (1906), cemetery of 6th cent.

are tired of them, but they only succeed in being untidy. The artists of Sarre share in their rebellion, but they have learned *how* to be irregular.

Merrythought bottles without merrythoughts have been numerous on Kentish sites, as on the Continent. Sometimes they retain the spiral trail round the neck,¹ much more frequently they are quite plain.² They occur in several shades of clear green metal, in golden-brown, and in a dark-coloured blue. The best collections are in the British Museum, largely from Faversham,³ and in the Liverpool Public Museums, where Parson Faussett's⁴ collection is now preserved.

Palm-cups like the Sarre example⁵ are the ordinary drinking-glasses of the fifth and sixth centuries, and they cannot usually be dated more closely. Dozens of them have been found in France—even in England they are a commonplace—and like many daily models of later times they had a long career with few stylistic adventures. Sometimes they have moulded fluting rising from the vertex to the 'equator'.⁶ Less frequently the decoration is 'nuptial diamond

¹ Liverpool Mus. No. 6118 M (Faussett), from Kingston Down, grave 46 (*Inv. Sep.* Pl. XVIII, 6), pale-green bubbly metal, H. $4\frac{1}{4}$ in.

² One England example has the same kind of decoration as the Londinières palm-cup (p. 71); figured without details by H. J. Powell, *Glassm. in Eng.* Fig. 11 B (stated to be a Faversham find).

³ The dump of these bottles at Faversham may be explained by (a) a shop or (b) a pedlar or (c) a stray native gaffer from Seine-Rhine who jobbed up a furnace in that district. But if there was a gaffer he was not up to much. Some of these plain bottles may be urinals; glasses of similar form were so used by medical men about 14th cent. (see Rademacher, *op. cit.* Pl. 3).

⁴ An eighteenth-century parson and the author of a famous and delightful book, the *Inventorium Sepulchrale*. He endured the winter that he might dig in spring. His descriptions of objects found are brief and lucid.

⁵ Maidstone (K.A.S.) Mus. No. 262. Rough bottle-green metal, thick-blown and heavy. Found at Sarre (Kent) in 1863-64. H. $3\frac{1}{8}$ in. Punt-mark at vertex, rim folded outwards.

⁶ Brit. Mus. Gibbs Loan No. 1315-'70 (blue-green metal, from Faversham); Liverpool Mus. No. 6401 M, Kingston Down grave 146 (*Inv. Sep.* Pl. XVIII, 4), diam. $3\frac{1}{10}$ in., H. $2\frac{3}{4}$ in.

ways'¹ or trailed in rectilinear patterns,² or trailed as a band of horizontal thread.³ One or two examples still retain the regular 'classical' loop trail which drove the Sarre trailers to invent a merrythought of their own, and probably belong to the fifth century.⁴ But most of the palm-cups are undecorated except for the fold of the rim. They vary slightly in shape from a hemisphere to a bell and from a bell to a short cone, while their metal is brown amber, or treacle coloured, or a watery green of varying depth. A plain hemispheroid cup at the British Museum⁵ is the best bit of metal I have seen in this series.

With free fancy in the air and a growing interest in linear design, it is not surprising that bowls soon passed out of vogue. I do not say that they were never used, but they belonged to the age of sedentary vessels and that age was over by A.D. 400. A bowl form is all very well for a painter. He can turn his vessel bottom up and has a dome to decorate. But glassmakers with a trail in their mind need a vessel which has length enough on the iron or the punt to offer them a field.⁶ And try as you may it is difficult to get a vertical accent from a bowl model. A chair whose work⁷ is now at Worthing did their best with the un-

¹ Palm-cup from Londinières at Rouen (Cochet, 1847). H. $3\frac{3}{4}$ in. I do not know this decoration on this type in England, but it occurs on a stable beaker, Brit. Mus. Gibbs Loan No. 1319-'70, treacle-coloured metal, from Faversham, H. $5\frac{1}{2}$ in.

² Palm-cup found at Minster (Thanet) about 1786 (Douglas, *Nenia*, Pl. XVII, 4); whereabouts now unknown. Shape as cow-bell; diam. 5 in. This piece had two trailed cordons crossing at the vertex with vertical cordons in the four panels so formed.

³ Liverpool Mus. No. 6513 M (find-spot uncertain), 6-line trail.

⁴ Brit. Mus. Gibbs Loan No. 1314-'70, from Faversham, dark treacle-coloured metal, H. $4\frac{1}{4}$ in., diam. $4\frac{3}{4}$ in.

⁵ No. 1922-5-12-5, diam. $4\frac{3}{8}$ in., clear soft green, lovely quality.

⁶ Snake Thread (Rhine) Ltd. rarely use bowl forms; and for turnery trail length on the iron is even more desirable.

⁷ Worthing Mus., bowl from High Down, clear metal thin-blown, knock-off

promising shape. They straightened its sides to an acute angle, making the base less than half the diameter at the rim and stressing the effect by ten narrow vertical concavities.¹ But their metal is still of Syrian character and without the softness of *Waldglas*, and we can hardly date their work much after A.D. 400.² An older shape but a younger metal are seen in a fine bowl³ in the Liverpool Museum, included in Parson Faussett's collection and presumably found in his area. This piece, in spite of its metal, is not later than the fourth century. Both the types I have mentioned have been found with fifth-century associations, but they strike one as having seen long family use.

I must notice in conclusion a small group of glasses which in shape resemble a spinning-top. They have been found on English sites of the Anglo-Saxon period and have long been mistaken for unstable drinking-cups⁴ of smaller size than usual. Actually they are the bases of

rim slightly cupped, no punty-mark, H. $2\frac{1}{8}$ in., top diam. $4\frac{1}{8}$ in. The bowl shows a heavy incrustation, of the kind which Parson Faussett described in the immortal words 'armatura or electrum'; see how he found the Crundale bowl, *Inv. Sep.* p. 183.

¹ For a similar use of numerous narrow concavities cf. Liverpool Mus. No. 10170 M, a transition piece between the sedentary cup and the palm-cup (find-spot uncertain).

² An almost identical bowl was found in a grave at Andernach of the late Roman period; see *Bonner Jahrb.*, 1888, p. 197, grave 141, and Pl. XI, 4. Coins of Magnentius (350-63) and Magnus Maximus (383-388) in grave 123. There is a close English parallel in the bowl from Bifrons (Kent) figured by Brown, vol. iv, Pl. CXXVI, 1, with some shrewd remarks on its date (p. 485); diam. 6 in. A similar piece, of smaller size, is Ashmolean No. 21-1885, H. $2\frac{1}{4}$ in.

³ Liverpool Mus. No. 6639 M, clear bluish-green metal of a soft *Waldglas* quality with several large tears, straight sides, flat rim folded outwards, foot-rim with wear marks, H. $5\frac{1}{8}$ in. For the shape cf. *Denkmäler*, i, Pl. 7 left (W-R. Mus. No. 24342); *Bonner Jahrb.*, 1888, Pl. X, 58 (Andernach); *Album Caranda*, Pl. 79, *nouv. série*, No. 3 (Villa d'Ancy).

⁴ So Faussett, Douglas, Akerman, De Baye, and other older writers. The mistake was repeated so recently as 1915 by Baldwin Brown, vol. iv, p. 485, and Pl. E. 2, where the Dover beaker base is even figured in colour.

stable beakers and were made in the fourth or early in the fifth century. There are examples in the museums at Dover,¹ Liverpool,² Oxford,³ Carisbrooke Castle (I.W.),⁴ and elsewhere. The metal is usually clear *Waldglas* of dark-green colour with a coating of 'armatura or electrum'. The sixteenth-century beaker form shown in Plate XV *a* will give a rough idea of the original shape. The fourth-century beakers to which these bases belonged were blown in one piece; the end of the paraison was then kicked back into the interior to make the vessel stable and the resulting foot rim was 'zip-fastened'. That is why in all these 'cups' the punty-mark is on the 'inside'.

The outer of the two skins of glass is broken off evenly and forms an equator between the rim and the top of the kick. This evenness seems to be intentional, and several beaker bases from late Roman sites show the kind of household accident which suggested it; the upper part of the glass is gone, but the top of the kick is still surrounded by a high jagged fringe.⁵ Even in Egypt, where glasses could be had easily, a broken vessel was sometimes cut down to make the best of a bad job.⁶ How much more was

¹ Dover Mus. No. SB. B/27, found fourteen feet below the surface opposite the Grand Shaft, Dover, in 1854, H. $1\frac{1}{8}$ in., rim diam. 2 in.

² Liverpool Mus. No. 6064 M, found by Faussett at Gilton (Kent), grave 52, *Inv. Sep.* Pl. XVIII, 5. Rim diam. $3\frac{1}{2}$ in.; high narrow kick. Another similar beaker base, *ibid.* No. 6329 M, rim. diam. $2\frac{3}{4}$ in., find-spot unrecorded but probably Kentish.

³ Ashmolean. Found by 'Nenian' Douglas at Chatham in 1781, very dark metal now black-looking, rim diam. 3 in., H. 2 in.

⁴ Carisbrooke Castle Mus. Found on Chessell Down, Isle of Wight (Jutish cemetery), prob. by G. Hillier in 1855, rim diam. $2\frac{3}{4}$ in., H. $1\frac{1}{2}$ in. (drawing kindly sent by Miss C. Morey).

⁵ *E.g.* (1) Shrewsbury Mus. No. F.66, beaker base from Wroxeter, rim diam. $2\frac{3}{4}$ in.; (2) two beaker bases of the same type with high jagged fringes come from Roman villa at Fifehead Neville and are in the Dorset County Mus. (numbers not visible).

⁶ Two such crystal bowls from Karanis were shown to me recently by Mr. D. B. Harden.

it necessary in Northern Europe at the beginning of the fifth century, when the retail trade was disorganised. The Jutish housewife who set foot in Kent had her small stock of family glass, and it was a serious matter when she broke it. She and her family were on the move, and England a new country. With the Channel behind her and Kent in front she was a long way from the fine shops on the Rhine, and she must make what she could of her broken treasure. She chipped away the jagged fringe till it was smooth enough to hold in the hand. When she turned up the kick she had a glass in the new unstable fashion and she could drink as well as the nobility.

CHAPTER II

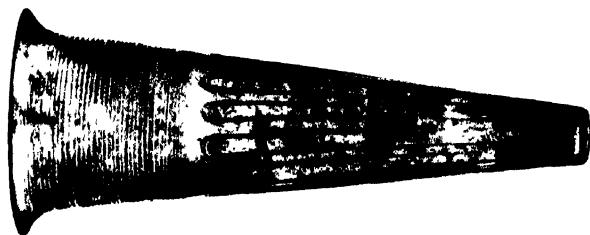
THE MEDIAEVAL SLUMP

AT some period between the fourth and the seventh centuries it is natural to look for a transference of the Seine-Rhine industry from Syrian to Northern hands. The making of a gaffer needs three generations, and the transference was bound to be a gradual one. It would be easy enough to equate this change in personnel with the obvious transition from blown form to plastic unrest, from a hard light-green Syrian metal to a deep watery *Waldglas*. Certain nineteenth-century archaeologists of the school of Akerman and De Baye noticed a difference in metal and put down this equation, thereby creating the legend of 'Anglo-Saxon' glass. But history, at all events glass history, does not happen in this clear-cut and convenient fashion. Plastic unrest was marketable in the second century and there is still blown form in the fourth. Metal is partly the result of local circumstance. During the late Roman period many glasses in 'Syrian' metal are quite bad enough in work to be assigned to new native hesitant glass-houses. During the two following centuries when *Waldglas* has almost ousted its predecessor, the blowing and trailing in high-class models are much too good for any but Syrians. Merovingian Gaul was full of Semitic tradesmen on the make.¹ In most of the great cities, Arles,

¹ The economic situation in which the glass industry had a place is well described by S. Dill, *Roman Society in Gaul in the Merovingian Age*, London 1926, esp. pp. 244 *seq.* and pp. 470 *seq.*

Nice, Marseilles, Orléans, Bourges, Trèves, and above all Paris, industrial capital was largely controlled by Semites. Their activities were not confined to the black-coat business of bankers, ship-owners, moneylenders, and wholesale produce merchants. They were leaders in the professions of law and medicine and in the arts of the jeweller, goldsmith, and silversmith. Glass was one of these preserves. When this fact is remembered it becomes tolerably certain that claw-beakers, cone-beakers, and other *high-class* vessels were the work of Syrian firms who lingered in the Seine-Rhine field as long as they could extract a living from the new aristocracy. But it was not these men who kept alive the tradition during the mediaeval slump. They cleared out when the market turned sour.

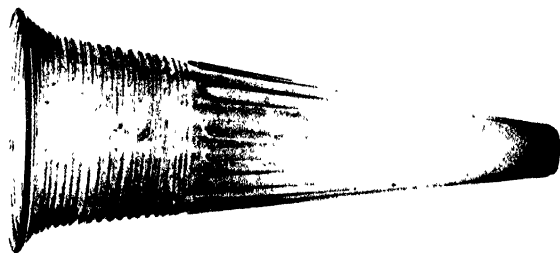
Continuity begins from the native houses which worked with a limited local capital and without a gaffer on the premises who was Syrian in blood or directly Syrian in training. In England we may associate them with the poorest of the palm-cups and with the small Faversham bottles which do not rise to a 'merrythought'. Both types are conspicuous for an inferior quality of *Waldglas*, for poor manipulation, and for absence of artistic intention. The native manufacturers, left to their own devices and with a bare ability to blow, had to learn their job from the beginning. The ecclesiastical ban on the burial of 'things' has deprived us of their earliest work. A few glasses from pagan burials in Scandinavia, and some others which have been casually preserved, show that the tradition was continuous, but that progress was slow. The native glasshouses did not attain the mastery of Castle Eden or Reculver until the fifteenth century. The great creations of this Northern tradition are the *Krautstrunk*, the *Römer*, and the *Spechter*. These vessels belong to the same style as the claw-beaker, but their effect is attained by a different tech-



(a) Cone-beaker, pale sea-green glass slightly bubbly, fourteen trailed loops. Found at High Dorton (Sussex). Seine-Rhine; c. 500 A.D. H. 10". Worthing Mus. See pp. 15 and 43 sq.



(b) Claw-beaker, sage-green glass slightly yellowish, eight claws with notch-tooled over-trails below cordon. Found at Taplow (Bucks.). Seine-Rhine; middle of 6th century. H. 11½". Brit. Mus. See p. 62.



(c) Cone-beaker, pale sea-green glass, eleven trailed loops. Found at Kempston (Beds.). Seine-Rhine; c. 500 A.D. H. 10½". Brit. Mus. See pp. 15 and 42 sq.

nique. The claws of the claw-beaker were done on the blowing-iron. The blobs or *Nuppen* of the *Krautstrunk* were done on the punty.¹ In that fact lies the genius of German glassmanship.² The mediaeval glasshouses of Germany—and German glass was mediaeval until the end of the seventeenth century—were bad blowers, but they were splendid stylists.³ In the claw-beaker the Syrian is exploiting the Northern taste; in the *Krautstrunk* the North is working for itself.

So far as style goes we might expect the *Krautstrunk* to be two centuries later. Actually the two vessels are separated by about nine centuries; for which delay there were three main causes. The first was the growth of anti-Semitism in Merovingian Gaul during the late sixth and early seventh centuries. This movement has been made familiar in its religious aspect as a conflict of the Christian Church with the Jews, but the real issue was racial and commercial. The Germans who invaded Gaul discovered that the industrial capital of the country was largely in the hands of orientals, in some trades their superiors as craftsmen, and invariably their superiors as men of business. It did not much matter, from this point of view, whether a concern was specifically Jewish or generally Syrian. The glass industry suffered with other rackets of the Semite. High-class models disappear when anti-Semitic propaganda was most intense, and we may regard Castle Eden and Taplow as among the last works of the Syrian gaffers before they were driven out of business.⁴

¹ One effect of this is seen in the tails of the *Nuppen* (or blobs), which tend to point upwards, *i.e.* away from the punty. The droop of claws and of Seine-Rhine blobs is in the reverse direction.

² And in a rather different sense of English lead crystal, which is a chair style rather than an inflational style.

³ Rhenish 16th-cent. stoneware is a parallel; a superb style which is liable to avoid purely trochoplastic appeals.

⁴ Cf. p. 62 and 124.

The young native industry which took their place needed an exacting market to nurse it into artistic competence. The Church, its most important customer, declined to do so. Chalices of glass were several times prohibited by ecclesiastical authorities between the ninth and the fourteenth centuries. The ban was not always enforced and sometimes it was not imposed, but it indicates the prevailing attitude. In the ninth century it was quite justified. The native industry was doing little high-class work and it could not turn out a decent chalice. Its wares were named with wood, pottery, tin, and other 'common' materials, and throughout the middle ages they were limited to objects of mere use—lamps, urinals, phials, distillery and medical vessels. The loss to the industry was less in the turn-over on chalices than in damage to its prestige. What it needed at this stage of its career was snob appeal. If the Congress of Rheims (A.D. 813) had ordained glass chalices the industry would have made them good enough, and domestic-and-fancy would have been the equal of silver.

The third cause of the slump was specialisation within the ranks of the industry. The Church was its most powerful and wealthy customer and exercised the same kind of pressure as a line of chain stores which imposes its policy on supplying manufacturers. The Church wanted windows, and during the sixth, seventh, and eighth centuries the bias of production shifted from domestic-and-fancy to broad glass. The extent of this specialisation is evident in a text-book compiled about A.D. 1000 for the guidance of manufacturers in the north of Europe who found technical information difficult to obtain. Its author, a German monk famous as Theophilus,¹ confines himself to the branch

¹ The best edition is that of W. Theobald entitled *Technik des Kunsthandwerks im zehnten Jahrhundert*, Berlin 1933. The glass handbook is Lib. II of the *Diversarum Artium Schemata*.

of the industry which was in greatest demand, devoting special attention to the plant, the mixtures, and the colouring oxides which it required. He gives a clear account of the blowing and splitting and flattening of the cylinder from which broad glass was made, but of glass vessels and the finer acts of manipulation he says extremely little.¹ The industry in Lorraine, Hesse, and the Rhine country had the best reason to care little for these things. From the eleventh to the fifteenth century it did an enormous business in clear and coloured window glass among glaziers and glass painters who had an ecclesiastical connection.

At the other end of the old Seine-Rhine glassfield the glass-houses of Normandy followed suit, but they evolved a different method from that which was described by Theophilus. In the early part of the fourteenth century the glassmakers of La Haye, near Rouen, began to manufacture window glass by spinning a crown, that is by blowing the paraison, opening it at right angles² to the iron and then trundling the disc so formed until it became a large flat circular 'crown' with a bull's-eye core in the middle. It is highly unlikely that this method was discovered afresh in Normandy. The crown is the same in principle as the large flat dishes made at Sidon and elsewhere in Syria during the first three centuries

¹ Of his thirty-one chapters only four deal with vessels as such (II, 10, 11, 13, 14). Of these, only two (II, 10, 11) deal with domestic-and-fancy manipulation. Cap. 11 describes the swing for small long-necked 'paraison' bottles. Cap. 10 describes the drop-on process for handles, but only for hanging vessels (*Quod si volueris ansas in eo facere, quibus possit pendere . . .*). Theobald is in error in illustrating a single jug-handle after Apsley Pellatt(!) (Figs. 21-24); the text says, *Fac ex his ansis, quot velis*, and clearly refers to a suspensory lamp, with several handles, type Rademacher Pl. E, 2. The only decorative manipulation mentioned by Theophilus is the turnery trail: *Aufer etiam modicum vitri a furno, ita ut filum post se trahat* [cf. Pliny, xxvi, 26, *nec est alia sequacior materia*], *et apponens vasi, in quo loco volueris, circumvolve juxta flammam*. Theobald is again in error in illustrating (Fig. 26) the free trail of a Snake Thread bottle.

It may be noted that Theophilus used *puer* in the same sense as 'boy' (II, 6).

² The Theophiline cylinder was split lengthwise.

A.D. Window crowns (*specula*) were spun by the same method in Syria during Roman times, and they were certainly made in the East about the eighth century. It was from the Syrian crown men that the Venetians learned to spin their *rulli*. In these circumstances it is possible that Normandy crown was a result of European contacts with Syria in the thirteenth century.¹ In any case, the crown is a gaffer's way of making window glass; by comparison the split cylinder of Theophilus and the 'Rhenish end' was a Northern makeshift.²

The art which emerged from this revolution was of a different magnitude from any glasses which are noticed here, but it was not an art of the glasshouse. The gaffer ceased to be either an inventor or a maker of shapes, and even in spinning and flashing he descended to the level of a skilled operative. The business of the glasshouse was to maintain the quality of its metal and to improve and vary its colours according to the demands of the middleman. The glasshouse became an efficient factory, and its art passed to external designers. But both methods of making window glass were inflational, and they kept alive the bare ability to blow until the market was again ready for

¹ The crown is first mentioned at La Haye early in the fourteenth century, but it may have been introduced earlier. The Crusades offered opportunities for obtaining Syrian gaffers, and in the twelfth century a French nobleman, Prince Bohemond of Poitiers, was master of Antioch, which was then a centre of the Syrian or Jewish glass industry. The leading manufacturers were then R. Mordekhai, R. Chaiim, and R. Jisma'el (Trowbridge, *Illin. Stud.* xiii, 118, citing Benjamin of Tudela, *Travels*, trans. Asher, 1840, i, 58).

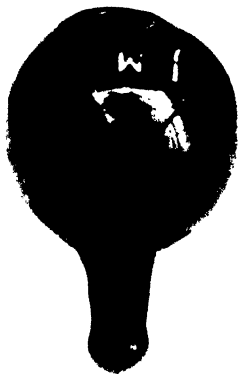
² Crown was superior to broad because it could be spun very thin and it retained a natural fire surface. By reason of splitting and rolling, broad glass was inclined to be thicker and less transparent. Broad was an improvement on the clumsy window glass made in the North in Roman times, the initial casting being replaced by the cylinder. But crown was a gaffer's job from start to finish. It was best suited to quarries and other small pieces. As a result of the Normandy immigrations at the end of the seventeenth century, crown killed broad in England; but in the nineteenth century broad rose up and killed crown.



(a) *Monstrous physician with (glass) urinal. Sculptured panel. Rouen Cathedral, Portail des Libraires; c. 1300. See p. 83 sq.*



(b) *Zacharias in bed (Luke, i.), with suspended (glass) lamp. Amiens Cathedral (West Front); 1218-36. See p. 85.*



(c) *Lamp, green glass blown thick; punt-mark on handle. Found at York. Probably English; about 14th century. H. 2 $\frac{7}{8}$ ". Mortimer Mus., Hull. Cf. p. 84.*



(d) *Wise Virgin with (glass) lamp. Stone sculpture. Amiens Cathedral (West Front); 1218-36. See p. 85.*



(e) *Apothecary's phial, pale green glass. Found in Liverpool Street, London. English; 16th century. H. 3 $\frac{3}{8}$ ". Laing Art Gallery, Newcastle-upon-Tyne, No. A. 5668. See p. 86.*

domestic-and-fancy. Early in the fifteenth century the demand was renewed, in France by royalty and aristocracy, in Germany by the rise of the merchant classes. The industry had sufficient skill to answer this demand in a style independent of Venice and the Italian Renaissance. Their art was recognised in Lorraine, Normandy, Burgundy, Poitou, and elsewhere by the economic title of *noblesse*, from which the Lorraine immigrants in England derived their status of gentleman or esquire. But before we come to their relations with the new gaffers from Murano, I must follow briefly the little dinghy which was towed through the Middle Ages by the great ship of 'stained glass'.

So far as records go, this new industry sent its first 'colonists' to England early in the thirteenth century, about two hundred years after Theophilus produced his text-book for the 'Rhenish end'. By that time England belonged once more to a Channel civilisation, and the colonists came from Normandy to exploit a new market which had been created in England by the building campaign of the Church. The father of Wealden glassmaking, Laurence Vitrearius, settled at Dyers Cross, near Pickhurst, about 1226, and within twenty years had built up a prosperous business in clear and coloured window-glass. The measure of his success is an order which he obtained in or about 1240 to supply both these kinds of glass for the new abbey at Westminster. In the hands of his son, William le Verrir, the business flourished until the end of the thirteenth century, and helped to secure a Royal Charter for Chiddingfold¹ in the year 1300.

During the fourteenth century, the leadership of the

¹ Noted by Mr. S. E. Winbolt in his recent *Wealden Glass*, Hove 1933, p. 8. The site of a glasshouse near Vann House, but occupied mainly with vessel manufacture, is associated with the Laurence family (*ibid.* pp. 7 and 29-30).

industry passed to the Schurterres, another French family, who settled at Chiddingfold in 1343 and inaugurated the great period of the Wealden industry. In the middle and latter part of the fourteenth century its prosperity is attested by the activity of travellers and London agents, of whom the best known are John le Alemanyne and Richard and William Holmere. Between 1350 and 1356 Alemanyne secured orders for some at least of the glass required for St. Stephen's Chapel, Westminster, and for St. George's Chapel at Windsor, while the Holmeres conveyed Wealden glass from Chiddingfold to Westminster. Another firm of agents, Dedington and Son,¹ had their headquarters at Chiddingfold and supplied window glass for St. Stephen's Chapel, Westminster (1351), Merton College Chapel (1359), Winchester College, and New College (1386).

The Schurterre family continued making glass until the end of the fifteenth century, but latterly they met with severe competition from a family called Peytowe (? Poitou) who settled at Chiddingfold in 1435 and worked a number of glasshouses in that area. They were still at work in the first half of the sixteenth century, but succumbed to a new invasion associated with the names of Carré and Verzelini. They conclude the older Wealden tradition and it may therefore be convenient to notice here the remains of mediaeval vessels of earlier date than 1500.

The vessel fragments found by Mr. Winbolt on the sites of glasshouses in the Weald include a pale-green fabric, not blown very thin and not dissimilar in colour and quality from glass of the later Roman period. This fabric was found at Vann about a foot lower than other types and is the only instance of stratification. It is

¹ These men, like Alemanyne, represent sales rather than production, but no doubt they had an interest and a voice in production policy.

not of the Roman period and it is distinct from the richer green *Waldglas* made in the Weald in the sixteenth century, and found on the site of the Flemish glasshouse at Woodchester and the Lorraine glasshouses at Blore Park (Staffs). By elimination it must be assigned to a period between 1226 and (say) 1550. Vessels made in this metal include decoration trailed spirally, decoration wrythen spirally,¹ and an interesting fragment² of a cup. The latter was a sedentary cup, with a broad base and straight sides tapering to a narrow orifice; a descendant of a 'Roman' sedentary cup not paralleled in the sixteenth century. But perhaps the most interesting of these fragments in pale-green metal is the neck³ from a bottle, in shape and size resembling a washstand 'tooth bottle', but with a flatly everted orifice. In 1240 the Laurence family enjoyed the royal custom of Henry III. His son Edward I (1272-1307) possessed *duo urinalia vitrea* for his own or his household's use. These vessels are not likely to have been expensive, for between 1368 and 1372 Edward I's second son, Henry, purchased a glass cup for 2½d., an appreciable sum but not a large one. *Urinalia* do not necessarily mean jerries, but also glass bottles used by medical men for inspecting urine, a purpose for which glass has obvious advantages, as the Netherlandish painters have shown. Such a glass urine-bottle is represented in a sculptured panel of the Portail des Libraires at Rouen, a part of Rouen Cathedral begun in 1280 and finished early in the following century. A monstrous physician is holding up a glass bottle against the light to study the urine therein (Plate XIV *a*), and the bottle has been made with a wide

¹ This required a mould to start it; and moulds were among the properties and tools bequeathed in 1535 by John Paytowe (Peytowe) to his son. This fact, brought to light by Mr. Winbolt (*op. cit.* p. 11, col. 1), is important evidence of the early vessel manufacture.

² Form-definitive, Guildford Mus.

³ Guildford Mus., Cooper Collection, unnumbered.

flat rim. The bottle at Guildford was of similar shape; and it was from Normandy that the Laurences came. May we not infer that the Wealden urinals—there are fragments of several—and their pale-green metal were made about 1300 and that Edward I was glad to purchase them?

The Wealden fragments include one or two examples of a rounded unstable vessel somewhat resembling the vertex of a large test-tube. One of these, in the Cooper Collection at Guildford,¹ is 1½ in. high, so far as it survives, and about the same in diameter. Mr. Winbolt follows the late Mrs. H. C. Halahan in describing these vessels as palm-glasses, and regards them as a late survival of the unstable drinking-cups which had been in vogue during the fifth and sixth centuries. I have the utmost difficulty in believing that this peculiar fashion was still effective in the thirteenth and fourteenth centuries. In his admirable study of mediaeval German glass, Dr. Rademacher can adduce no unstable drinking-glass of nearly so late a date. The balance of evidence makes it more probable that they are the lower parts of lamps.² A type of glass lamp common in the thirteenth-fifteenth centuries was made in a shape described by collectors of English wine-glasses as 'a double-ogee bowl'. The accompanying illustrations of mediaeval sculpture will show how they were used for carrying and for hanging in the north of France. The Wise Virgin of Plate

¹ Not numbered; figured by Winbolt, *op. cit.* p. 11 illus., front row, 2nd from left. A more complete example is drawn by Mrs. Halahan, with dotted restoration, in *Soc. Glass Techn.* xvi, 1932, p. 268, No. 3 (reproduced by Winbolt, p. 5 illus., bottom left); but I suspect that Mrs. Halahan has completed the unstable part with a rim which does not belong to it.

² The history of glass lamps has been treated exhaustively by Mr. D. B. Harden, *Journ. Egypt. Archaeol.* xvii, 1931, pp. 196 *seq.*, and by Rademacher, *op. cit.* pp. 75-90, Pl. E and Pls. 18-21. Apart from the two or three Wealden examples noted above, there are four lower parts of such lamps at Christchurch Mansion, Ipswich, probably of Wealden make. In one of them enough remains of an everted profile to indicate the form of the upper part as probably like Plate XIV b.

XIV *d* is on the West Front of Amiens Cathedral, a part of the structure begun in 1218 and completed in 1236. The rest of the Wise Virgins carry the same lamps, while the Foolish carry theirs upside down. A lamp of similar though not identical shape is shown suspended in a panel illustrating the story of Zacharias and the birth of St. John the Baptist, also on the West Front at Amiens and of the same date as the Wise Virgins; but here the bowl and bucket of the lamp are less sharply differentiated. The actual lamps illustrated by Dr. Rademacher, and the illustrations of lamps which he gives from German mediaeval art, leave no doubt that the sculptor worked from contemporary vessels and that these vessels were of glass. The Wealden pieces are nearer to the Zacharias type than to the Virgin type. As for their date, some allowance must be made for insular time-lag, but even so they may be assigned to the second half of the thirteenth or early part of the fourteenth century. Mrs. Halahan, mistaking their purpose, was right in ascribing them to the Laurence period.

I can only notice here one other 'common' type made in England in mediaeval times. The bottle shown in Plate XV *b* was recently found at Whitstable under the foundations of an old wall, and is now in the Canterbury Museum, standing 5½ in. high and half full of its original oil. Several slim tapering bottles of similar design have been found in England, one of them *under the foundations* of a church which was built about 1390–1420.¹ In metal and work these steeple bottles²—if I may so name them for

¹ St. Nicholas Church, South Kilworth (Leics.); *P.S.A. Scot.*, 28. iv, 1867–70, p. 284 and illus.; H. 5½ in., orifice diam. 1½ in., neck diam. 1 in. The Whitstable dimensions are: orifice diam. 1 in., neck ½ in., base 1½ in. Its metal is clear green and it is not yet numbered.

² There are one or two others at the Guildhall, from London excavations, and two good early ones in the London Museum (A. 5789 and fellow), one of them very elegant.

convenience—are rude enough, but their slim vertical design has an obvious affinity with later Gothic architecture and with the *Spechter* drinking-glasses made in Germany soon after 1400. They are the fathers of the modern cylindrical ‘medicine bottles’ and develop by three well-marked stages. By the early part of the sixteenth century they are shorter and they are beginning to lose their Gothic taper.¹ In the course of that century they become cylindrical and they retain that shape with little change until the eighteenth century.² During the latter part of the sixteenth century they were joined by an oviform or bulging phial.³ This was the result of the Venetian immigration, which prompted even the common native houses to a fresh sense of inflational value. But the career of the bulging phial was not a long one, because cylinders were more convenient to apothecaries.

The Wealden tradition was broken a little rudely between 1549 and 1575 by two new forces, the Lorrainers and the Venetians. There had lately been a great deterioration in the quantity and quality of Wealden production, and several promoters from the Netherlands saw an opportunity of introducing their own men and making a corner in the English industry. The most successful and important of

¹ Loss of taper is well illustrated by a Cologne bottle, Rademacher, Pl. 7 f. The Kilworth-Whitstable steeple-bottle is earlier on evidence and patently earlier on style; its *floruit* is about 1400. Late steeple-bottles, losing their taper, are well represented by Lincoln Mus. No. 15-’24 (St. Benedict Churchyard), No. 273-’07 (Lincoln), No. 140-’08 (Silver Street, Lincoln); and by Laing Mus. (Newcastle-on-Tyne) No. A.5668 (Liverpool St., London). See also note on p. 119.

² For total disappearance of taper see Rademacher, Pl. 7 d, e, g. Cylindrical apothecary’s phials of 16th-18th cent. are very common in English museums, and have sometimes been confused with the so-called tear bottles of Roman date; but metal, kick, and punty-marking are quite distinct. They were occasionally made in flint-glass, as Gloucester Mus. No. Kr.-G.1, excavated in Bristol.

³ Types, Laing Mus. No. A.5821 (London find), Lincoln Mus. No. 7-’24 (Kesteven St., Lincoln); other examples in Guildhall and London Mus.

them was Jean Carré (John Carry) of Arras, and later of Antwerp, London, and Alfold. He had the dual intention of making clear-glass vessels in London and window glass in the Weald. After prolonged negotiations with the Government, with his own partners, and with the established Wealden industry, he obtained in 1567 a licence to manufacture 'glass for glazing such as is made in France Burgundy and Lorraine'. For this purpose he introduced a number of glassmakers of Lorraine, but this enterprise terminated with his death at Alfold in 1572.

Carré's *gentilhommes verriers* belonged mainly to four Lorraine families¹—Hennezel (Henzey, Ensell), Thisac (Tyzack), Thiétry (Tittery, Tyttery), and Houx (Hoe)—which had earned their privileges from the King of France in 1448 and were equally skilful in glass vessels and in glass for glazing. They were Protestants by faith and all the readier to accept Carré's offer of employment in England. Between 1567 and 1572 they worked for him in the neighbourhood of Alfold and probably also in London, and as long as the strong hand of Carré ruled the Wealden industry they seem to have been left in peace. As soon as Carré was dead they met with an outburst of local resentment from the older Wealden glassmakers, who were in danger of losing their livelihood to better men than themselves, and from the ironworkers whose fuel they consumed. In 1574 there was a plot at Petworth to burn them out and within two years most² of them had left the Weald. Several of the Lorraine families seem to have joined forces with Flemish and Normandy glassmakers and reappear in the woodlands of Hampshire in 1576. One of their glass-houses was discovered at Buckholt³ in 1860, and between

¹ Territorial designations preceded by *du* and *de*.

² Not all. In 1602 Edward Henzey was still in the Weald.

³ *J.B.A.A.* xvii, p. 57; cf. *Hug. Soc. Pub.* iv, *Registre . . . Eglise Wallonne* (1910).

1577 and 1579 names of three Lorraine¹ families occur, with others,² in the registers of the Walloon Church at Southampton. The address of all of them is given as '*a bouque haut*'.

The next stage in the migration has been identified in recent years at Bishop's Wood (otherwise Blore Park), an isolated spot between Eccleshall and Market Drayton. In 1582 the names of the Lorrainer and other glassmaking families³ begin to occur in the registers of the parish church at Eccleshall, and so continue until 1604.⁴ At Buckholt they still spoke imperfect English, but by 1584 at the latest their names are completely anglicised. In several of the Eccleshall entries members of the glass families were described as of 'Blower Parke', and in Blore Park three of their glass furnaces⁵ were found by Mr. T. Pape. They were excavated by him in 1931⁶ and are the neatest find yet made in glasshouse archaeology. On the

¹ Tisac, Hennezé, du Hou (*sic*).

² Jan Perne and Jan Buré (*sic*) were Flemish. Pierre Vaillant belonged to a famous family of Normandy glassmakers (see O. Le Vaillant de la Fieffe, *Verreries de la Normandie*, Rouen 1873). Probably all these men had been employed by Carré until 1572. It is probable that Godfrey Delahay (below, p. 120) came from La Haye, near Rouen, a famous glass centre.

³ Of the four families above mentioned, Hennezé, Thisac, and Thiétry occur in the forms Henzey (so commonly until 18th cent.), Tysacke (elsewhere Tyzack), and Tetrye (elsewhere Tyttery, Tittery). There are other French names: Margret Yevonce (Aprice), daughter of Yeaven Aprice. She was the daughter of a glassmaker and married one, a 'John Esquire' who was certainly a *gentilhomme* though his surname was omitted (15 Feb. 1600). James Leggeye (*sic*), described as a Frenchman and a glassmaker, married a glassmaker's daughter, Judyth Tyzake (*sic*), in 1604. Here, as in France, at Murano, at l'Altare, and among the Syrians of Roman times, intermarriage within the craft was necessary to maintain it.

⁴ Published in *N. Staffs. Field Club Trans.*, liv, 1922, pp. 33-5 (A.A. Rollason).

⁵ Square furnaces of the Lorraine type, not round furnaces of the Murano-Antwerp type.

⁶ See further *Connoisseur*, xcii, 1933, pp. 172-7, with map of the tract and furnaces, plan and photograph of the principal furnace, and photographs of typical examples of the numerous vessel fragments; and Mr. Pape's last paper, 'Med. Glassworkers in N. Staffs.', in *N. Staffs. Field Club Trans.* lxxviii, 1933-34.

evidence available at present, Blore Park was the first settlement of the Lorrainers after they left Buckholt, and Mr. Pape has suggested, with strong probability, that they took a direct course northwards through Warwickshire.

Another and smaller settlement existed at Newent in the Forest of Dean about the years 1599-1601, and traces of isolated French glassmakers who had detached themselves from the main trend of migration have been found at Cheswardine (Shrops.), Hyde (Ches.), Bristol, Newnham-on-Severn, and elsewhere in the west of England. The most interesting of these detached glasshouses was found in 1904 in Colliers Wood, Woodchester (Glos.),¹ and can be assigned on evidence to the period 1600-1615.² There are strong reasons for believing that this glasshouse was not French,³ but worked by one of the Flemish⁴ glassmakers who had been brought from Antwerp to England in Carré's time. For the fragments of vessels see page 91 *sq.*

Coal fuel gradually came into use during the first decade of the seventeenth century, and in 1615 the glassmakers and several other trades were forbidden to burn wood in

¹ See *Bris. Glos. Arch. Soc. Trans.* xlii, 1920, pp. 89-95 (W. St. Clair Baddeley); the excavation was done by Mr. Basil Marmont.

² The park at Woodchester was made by Sir George Huntley about 1617-20. Charcoal was used; and wood fuel was prohibited in 1615. There is no evidence of foreign glassmakers in Gloucestershire until 1599.

³ Mr. Winbolt (*op. cit.* pp. 18-19) is mistaken, I think, in describing Woodchester as a Huguenot glasshouse.

⁴ The reasons are: (1) The Woodchester furnace is round. The French type of furnace (*e.g.* Buckholt, Blore Park, and the Weald) is rectangular; the round furnace went from Venice to Germany and from Venice to Antwerp. At Antwerp it was used by Flemish and Italian glassmakers. The Woodchester vessels are *Waldglas*, not Italian soda-glass; Antwerp made both metals. (2) The jam-tart motive found on German phallus bottles about 1500 (Rademacher, *op. cit.* Pl. 9) occurs at Woodchester (Gloucester Mus.) and in Netherlandish pictures. (3) In 1610 Dominique Metrevis (*sic*) married Mary Parslowe at Horsley; there is no other notice of a foreigner. Metrevis more probably represents an Italian-Flemish than a French name. (4) There were Flemings at Buckholt.

their furnaces. From about that date the migrant glass-makers began to abandon regions of forest and to concentrate in the coalfields. The Forest of Dean was the only area occupied before 1615 which possessed both kinds of fuel. A glasshouse at Newnham-on-Severn was started during the monopoly of Sir Robert Mansell (p. 115 *sq.*) and used 'stone coal', which was no doubt mined locally. It probably absorbed some of the Lorraine labour which had been employed at Newent about 1600 and it is stated to have been one of Mansell's concerns. South Staffordshire, possessing not only coal, but the best glass-pot clay in the country, soon outstripped the Forest of Dean. From 1612, when the Tyzacks are first noticed at Kingswinford, the Lorrainers of the dispersion began to congregate in the Stourbridge area and founded the glass industry which has flourished there until the present time. Here as elsewhere they were mainly occupied with window glass, but they also made bottles and *Waldglas* vessels, and some of their descendants adopted lead crystal and eventually cutting. The Tyneside coalfield was the third area to attract them. At Newcastle-on-Tyne¹ their first recorded appearance is in 1617, and between 1619 and 1750 the registers of All Saints Church contain more than six hundred notices of the Henzey, Tyzack, and Tittery families. Some of them fell under the sway of Mansell, but in the eighteenth century the window-glass branch of the industry was still their preserve.

With very few exceptions² we have only fragmentary

¹ In 1570 Bertram Anderson, alderman of the city of Newcastle-upon-Tyne, obtained ten dozen drinking-glasses from a local glasshouse, and in 1577 Thomas Niddell obtained little glass bottles from the same source (*Bull. Com. Roy. Art. Archaeol.* xxix, 1890, p. 134).

² See p. 91 *n* 3; Pape in *Connoisseur*, u.s. Fig. 3 (centre). An entire cylindrical apothecary's phial was found at Broughton Moat and shown to me by Mr. Pape; tops of such phials are frequent on the sites.

remains of the vessels made by Lorrainers and Flemings between 1550 and the Restoration. But at Blore Park, Sidney Wood, and Woodchester, the fragments are sufficient in size and number to show that the immigrants had a Northern art of their own. That art was realised fully in Germany¹ *after* the noble and merchant classes had become once more responsive to domestic-and-fancy, but *before* the intrusion of Venice became effective. And the fragments show that in a less degree, and in rather a different sense, it was realised in England. The Lorrainers failed when they tried stemmed drinking-glasses or a thin-blown elegance which they picked up at Antwerp or from the Italians on Carré's English staff.² Their best English work was done in their excellent green metal and by a habit of one-piece work inherited from the Syrian industry in Seine-Rhine. Their favourite shapes and their best designs belong to the tall narrow Northern beaker.

Without a large number of archaeological drawings it is impossible to notice the English fragments except in general terms. On the sites I have mentioned beaker bases are frequent and they fall into two main groups, representing Flemish models and Lorraine models respectively. The first kind tend to be flat, with a low kick, a hemmed base rim, or a rigaree trail. A good idea of the shapes sustained by them may be obtained from the reproduction shown in Plate XV *a*.³ Other glasses were reconstructed

¹ Especially *Spechter* and *Passglas* (verticality) and *Krautstrunk* and *Römer* (squatness).

² Examples have been found by Mr. Winbolt. Cf. *S.G.T.* xvi, 1932, p. 267, No. 4; and two unnumbered examples at Guildford, one in Cooper Collection, the other in Winbolt Collection (two types of stem form).

³ The Woodchester reproductions are in Gloucester Mus. Nos. Sp. 211-218. The most interesting are No. 211, Wrythen, H. $6\frac{1}{2}$ in. (Pl. XV *a*); No. 214, pedestal cup, H. $5\frac{3}{8}$ in.; No. 215, with rim trail, H. $4\frac{1}{8}$ in.; No. 216, zoned and pruned, H. $4\frac{1}{8}$ in. The hexagonal bottle, No. 219, H. $5\frac{3}{8}$ in., is an original Woodchester piece. The fragments are also in Gloucester Museum.

under the supervision of the late H. J. Powell from base fragments found on the Woodchester site, and are happily influenced by a study of glass form in early Flemish pictures; Carré brought with him the trade models of Antwerp *Waldglas*, and Dominique Metrevis came most probably from Antwerp. Woodchester shows few signs of the extreme Rhenish idiom. The zoning and prunting of No. 216 is typical of the Netherlands, and so also is the cup with a high narrow pedestal foot (No. 214). The flat bases represented by No. 215 have also been found in the Weald and in London, with and without rigaree trail;¹ but the rigaree trail is typical of beakers assigned to Antwerp,² and the London examples of it may be either home-made or imported. The two countries had one industry. It is difficult to judge how tall were the beakers made in England, but I am inclined to think that some of the reconstructed designs³ do not give enough height in relation to the base diameter. Antwerp beaker forms tend to be tall and slim,⁴ and there is nothing in the English-found bases to suggest that design was less graceful on the English side.

The second type of base has a sloping instep and a high domed kick rising well above the fringe of broken wall. The height of the instep varies from half an inch to nearly two inches. Some examples with a very pronounced dome⁵ and a clean break need to be distinguished carefully from the 'spinning-top' family of the fourth-fifth centuries (p.

¹ So Canterbury Mus. Brent. Coll. Nos. 2565, 2602 (find-spots unknown), Cuming Mus. No. C.1823 (Finsbury), and several Guildhall examples.

² As Mr. Armand Baar, whose work on Antwerp glass is anticipated shortly.

³ See drawings in Winbolt, p. 69, Nos. 1-3.

⁴ A lager-glass idea rather than a washstand tumbler idea. Cf. p. 132 below.

⁵ Winbolt, p. 39, lower illus., left, is one of the best. Others in Guildford Museum. The Blore Park examples are destined for Hanley Museum, cf. Canterbury Mus. Brent. Coll. No. 989, diam. $3\frac{1}{8}$ in., H. 2 in., find-spot unknown.

72). The method of manipulation is precisely the same. In the sixteenth and early seventeenth century the degree of curvature varies, but in most cases it demands an outward curve or slant in the upper part of the vessel. In this respect Plate XV *a* illustrates the order of form. Instep feet have been found with rounded domes both at Sidney Wood and at Blore Park, but the doming at Woodchester is much less marked. For that reason we may regard the instep feet as belonging to a French rather than a Flemish model. Plate XV *a* lacks the high kick, but otherwise it represents the type; and the narrow waisting there evident is a feature of French glasses of the same period.

Both French feet and Flemish feet are well made and show an obvious attention to design. Their metal has been saddened by burial, but furnace droppings show its original loveliness. If we had the green beakers entire I suspect they would take a place beside Verzelini's 'Venice glasses', a different but not inferior art.

CHAPTER III

MR. JACOB

WHEN Carré¹ began operations in England in 1567 it was part of his intention to open a crystal glass-house in London with a round furnace of the Venetian type. On or about 9 August 1567 he and his partner Pierre Briet wrote to Cecil to ask for a licence '*de faire ung four en la cité de londre a la facon de ceulx de venize pour y faire les vasiaux par eux Requis et aussy toute sorte de verres de cristal a boire comme aud[ict] Lieu de venize*'. They refer to a privilege of the same kind recently granted at Antwerp and ask for a licence for twenty-one years and accommodation in London: '*Et combien que en tout lieu ou se faict led [ict] verre les princes et communautex des villes ou y se font leur donnete maison propre et sont francq de toute gabelles Comme aud[ict] lieu de venize anvers paris et en la cite en liege et aultres villes Mesure celuy danvers a tel previliegue que nulz verres de cristal ne se pouvent ventre en pais bas de la domination du roy philippe que ceulx qu il faict en lad[icte] ville danvers Sy esse que nous ne Requerons de sa maieste ny de la ville de londre maison sinon que en paiant et aussy paier les droictz den Ainsensemblement auoir lad[icte] lisense pour 21 ans et durant led[ict] tamptz que nul quel quil soit ne porra eriger en ce Royaume fours a faire led[ict] verre de cristal sur painne de perdre lesd. fours et estofez et aultre materiaux*'.

Carré and Briet proposed to obtain the soda requisite

¹ See above, p. 87.

for *cristallo* from an Italian merchant Jean Suigo ('*la soude quy est en mai[n]s de Jean Suigo marchat ytalien*'), and they continue: '*Nous esperons en dieu que auant trois mois nous aurons decore lá ville de londre dung art tant magnifique comme les ville tant fameuse cy dessus*'¹ (*sc.* Antwerp, Venice).

There is no evidence that Carré obtained the privileged licence for twenty-one years, but there are several indications that his scheme for a crystal glasshouse in London was carried into effect within the three months he had anticipated or a little later. Jean (Giovanni) Suigo, stayed in London and joined the glass colony in the parish of St. Olave's; he had children christened in the glassmakers' church on 12 November 1574 (Ortentia), March 1575 (Samwelo), and 17 June 1578 (Scipion), and is variously described as 'Maister Sweggo, stranger', 'Maister Swego', and when he was better known (1578), 'Mr. John Swego, stranger'. He was in England in 1567 and he would not have stayed if there were no crystal glasshouse to take the soda (*barillia*) off his hands. The Hall of the Crutched Friars was precisely the kind of accommodation Carré had in mind in 1567, an existing building ('*maison*') for which he might pay rent and in which he might construct a round '*four a la facon de ceulx de venize*'. The Crutched Friars glasshouse was in full working order in September 1575² and well known in St. Olave's in 1574.³ And it must have been for this glasshouse that Carré introduced seven or more Venetians to London late in 1570 or a little earlier. It is easy to see what his game was. In his letter of

¹ These and preceding passages are quoted from their letter to Cecil of 9 August 1567, endorsed in Cecil's hand 'Jean Carré ye Glassmakr.', in *S.P.D.* Eliz. xliii, No. 42. Some words in the letter are illegible and three lines are obliterated by stain, but the significant words are clear.

² See Holinshed quoted below, p. 98.

³ Registers, Christenings: '3 March 1574 Susan Pasquelyne daughter of Pasqueline, of *the glasse house*'; my italics.

9 August 1567 he makes no reference to Italian or Venetian glassmakers, but he proposes 'an art as magnificent as of the cities aforesaid', an art not of Venice or Antwerp, but of Lorraine. He intended to produce Venetian *cristallo* with cheap Lorraine or other Northern labour.¹ But he reckoned without his men. You cannot take men of tradition and convert them at a blow of the promoter's whistle to a code which they do not understand. For about two years Carré persevered with his Lorrainer crystal at the Crutched Friars, but by the beginning of 1570 he saw that it was hopeless and called in the Venetians *ex machina*. The men who came to his rescue were:

Dominyck Cassiler.

Lawrence Farlonger. Later at Kirdfold; the name Farlonger still survives in the Chiddingfold region.²

Vincent Gilio. See below, p. 104.

Biasio Bradarmin.

Frauncis Gilio. See below, p. 104.

John Morato. For his relative Domenico de Manalo (? error for Morato) see p. 99.

Ombien Lalere.

Quiobyn Littery. Registered in 1571: 'Quiobyn Littery glassmaker borne in Venys, Lucye his wyfe, born in Andwaerpe and Lawer there daughter, came hither a year ago (1570); he useth the

¹ The earliest notice of a glassmaker in 'St. Oliffes-at-Crowched friers' is in 1568; 'Peter Cant, Dowchman, glassmaker and his wif'. Dowchman, as commonly = anyone from the Low Countries; even Italians are so called. Anthony Becku (one of Carré's partners, see *History*, p. 63) was already a denizen in 1568, and called a 'glasemaker'; he lived in the parish of St. Michael's, Paternoster Row, had a wife and son with him, went to the French Church, and paid rent to Mr. Garrat of St. Martin's.

² Winbolt, *Wealden Glass*, p. 15, does not state the date when Lawrence Farlonger first appears at Kirdfold.



(a) Beer-beaker, wrythen decoration. Reproduction by James Powell & Sons from base fragment found at Woodchester (Glos.). The original, English (Woodchester); 1599-1617. H. 6½". Gloucester Mus. No. 211. See p. 91.



(b) Phila, green glass. Found at Whitstable (Kent), English; c. 1400. H. 5½". Canterbury Mus. See p. 85.



(c) Chalice, in form of zoned beaker (Pass-glass), clear crystalline glass, trailed decoration. Formerly at Oude Kerk, Middelburg. Made at Middelburg, in glasshouse of Antonio Mioti before he came to England; 1606-20. H. 7¼". Stedelijkmuseum, Middelburg. See p. 121 note 7.

Italian church but he never receyved the communion since he came; he sojourneth within the house of one Thomas Cape a painter', in the Parish of St. Benet Fink.¹

'Joseph, a Venetian and a glassmaker', was lodging in the same house as Littery in 1571 and had been in London four months.²

The first six on the list arrived in London on the last day of June 1571, lodged in the house of John Carr³ (Carré) in the parish of St. Benet Fink, and were registered as his servants. Ombien Lalere was also sojourning with Carr in the year 1571. Many liberties were taken with the christian name and the surname of Verzelini by clerks who failed to 'get' the spoken word, and it is likely that the description of 'Joseph' conceals the identity of Verzelini. Littery, Lalere, and he seem to have been a first instalment and brought the other six in their wake.

The situation thus saved, Carré died on 27 May 1572 and was buried at Alfold, where he belonged. He had no business to meddle in the crystal branch of the industry and he made the mistake of trying to be in two places at once; but it is to him and to the year 1571 that we must attribute the first permanent establishment for crystal glassmaking in England.

From the rank and file of the new-comers emerges Giacomo Verzelini, the pattern of all glassmakers and a great figure in our industrial history. He was born at Venice in 1522 and went to Antwerp as a young man,

¹ *Hug. Soc. Pub.* x, ii, 41.

² *Ibid.*

³ 'John Carr, Householder [parish of St. Benet Finck], and Jane his wyfe hath been here iiiii yeres and di', borne at Arras, came hither for religion and is of the Frenche church; he is a denizen and hath iii children' (*ibid.* x, ii, 39).

probably in 1549 when de Lame started his glasshouse. About 1556 he married Elizabeth Vanburen, an Antwerp lady of good family and a Mace on her mother's side; from which one may infer that Verzelini at thirty-four was a man of parts and likely to be a success in his noble profession. When he came to London in 1571 he was in his fiftieth year and had a young and numerous family. It is uncertain what his relations were with Carré, but we may suspect that he came over to manage the crystal glasshouse for Carré and that he was in charge¹ of the six Venetians who were Carré's servants. Verzelini was nobody's servant. After Carré's death he kept the staff together and carried on, with Domenico Cassilari as his right-hand man. His position was very difficult. Being as yet unnaturalised he could not acquire property, and so far as is known he had no official standing as Carré's successor. As the business improved he encountered much opposition from fifty London shopkeepers who were importing glass from Venice, Antwerp, and elsewhere. The situation came to a head on Sunday, 4 September 1575, a day when the glasshouse was not working.² An unexplained fire broke out early in the morning and awakened all London to a great free spectacle. 'The fourth of September being Sundaie about seven of the clocke in the morning a certain glasshouse which sometime has been the crossed friars hall neere to the tower of London burst out in a terrible fire: whereunto the lord mayor, aldermen and shiriffes with all expedition repaired and practised there

¹ ' . . . James Verselyne a Venetian, inhabitynge within oure cittie of London, who hathe sette uppe within oure said cittie one furneys and set on worke dyvers and sondrie parsonnes for the makynge of drynkyng glasses . . . ' (patent of 15 December 1575; my italics).

² The Verzelinis were a religious family. The furnace would be tended by a skeleton staff. Cf. Webster, *The White Devil* (about 1608), I, ii: 'An excellent scholar . . . that hath an itch in 's hams, which like the fire at the glass-house hath not gone out this seven years'.

all means possible by water buckets, hookes and otherwise to have quenched it. All which notwithstanding, whereas the same house a small time before had consumed great quantitie of wood by making of fine drinking glasses; now itselfs having within it neere fortie thousand billets of wood was all consumed to the stone walls, which walls greatlie defended the fire from spreading further and dooing anie more harme.’¹

Verzelini acted with decision and promptitude. A fortnight after the fire he sought protection from further trouble by applying for a royal privilege (15 September 1575). His enemies the glass sellers entered a vigorous protest to the Privy Council, but there is reason to think that his name was already good.² On 15 December 1575 he received his famous monopoly allowing him the sole English right to make ‘Venice glasses’ for a period of twenty-one years. On the strength of it he took out papers of denization dated 26 November 1576.

Business improved rapidly. The Crutched Friars glasshouse was refitted and a branch establishment was opened in Broad Street. When we next hear of Verzelini he is a man of position in the parish of St. Olave’s-at-the-Crutched Friars, ‘Keeper of the glasshouse’, and an employer of workmen and servants. Domenico Casselari was now with Verzelini (1581),³ and during the years 1581–83 several other Italians make their appearance in the parish of St. Olave’s and elsewhere:

Domenico (‘Domingo’) de Manalo. Registered ‘of no church’ but in St. Olave’s parish, 24 June 1581.

¹ R. Holinshed, *Chronicles*, ii, London 1586, p. 1261. This passage shows that the glasshouse was in full work *before* the monopoly, no doubt since 1571. Stow’s version is a crib of this one.

² See p. 104, n. 1.

³ In St. Olave’s, 1581 (*H.S.P.* x, ii, 221), and servant of Verzelini, 1582 (*ibid.* x, ii, 224).

Marcus Guado 'and Marie his wief, of no churche';
servant of Jacob Vercelin in 1582.

Vincencius Filiolo.

Nicholas Valarine, 'glassmaker and his wief and iii
children of the Italian Churche', lived in the
'ward of Allgate', 1582, but no doubt worked for
Verzelini.

Jhon Richardes, 'Frenche, Glassmaker', lived in the
Tower Ward (wherein St. Olave's), 1582, and
though French probably worked for Verzelini (cf.
p. 104, Bridgman).¹

Bastian Selmalle	} Parish of St. Olave's; all ser- vants with Verzelini in 1582. Marco Guado = Marcus Guado (above).
Marco Guado	
Vincent Cellcoll	
Camella Fermy	
John Maria Surleyn	

We may regard them as additional staff brought from
the Netherlands by Verzelini to fulfil his increasing orders.²
He had an expert staff of about twenty men, not all gaffers
perhaps, but certainly four or five chairs. Having made a
comfortable fortune he retired in 1592 at the age of
seventy to his estate at Downe, near Orpington (Kent).
He lived to enjoy it for fourteen years, his old age only
marred by the failure of his sons to continue the tradition
which he had created. But he declined to become a country
gentleman; and even after his retirement he insisted on the
family living in London, at any rate during the winter
months. He died at his house near the works which had

¹ See for these *H.S.P.* x, ii, 221, 304, 303.

² In 1589 Antonio Obizzo, member of a well-known Murano family, left the
Tre Corone and came to look for a job in London. For this he was sentenced to
four years' penal servitude in absence. In 1592 he went on from London to work
for Mongardo at Antwerp (Schuermans, *Bulletin*, xxiv, 1885, pp. 44 and 46).
He probably worked for Verzelini for two or three years.

been his, on 20 January 1606, aged eighty-four.¹ It was no doubt his daughter Elizabeth² who arranged that he should be removed to Downe. He was followed within two years by his wife Elizabeth, aged seventy-three.³ They are buried in the chancel of Downe Church, and commemorated by a pair of handsome brasses showing them side by side in civil attire below the arms of Verzelini, Vanburen, and Mace and above the figures of their six sons and their three daughters. Pilgrims who walk to this remote place will see a neat pointed beard and splendid head, a man of quick perceptions and grave dignity.

Something is known of his posterity. In 1621 Francis Verzelini was plaintiff in a Chancery suit against his brother Jacob, but there seems to be no evidence that they followed their father's profession, and of the four other sons I can find few traces.⁴ Verzelini's country house at Downe was called Valons, and had formerly belonged to 'a family called in the old dateless deeds de Valoniis'. In the time of Henry VII it was bought by Abbot Islip of Westminster and was given by him to his servant Thomas Middleton. Verzelini bought it from the Middleton family

¹ St. Olave's Registers (Burials): 'Feb. 3 1606 Mr. Jacob Verseline, howseholder, died 20 Januarie and was carried to a place call'd Downes in Kent and there on 3 Februarie buried'. This notice, in a register of *burials* at St. Olave's, shows that Verzelini was a figure in the parish and universally respected.

² Below, p. 102.

³ St. Olave's Registers (Burials): '28 Oct. 1608 Mrs. Elsabeth Versaline, widow, died 26 October and on the 28 of the saide monthe was carried to Downes in Kent, and there buried by her husband'. For the inscription on the brass see *History*, p. 84.

⁴ Leonard, son of Jacob Vesyntym, was christened at St. Olave's on 28 December 1573. 'Vesyntym' may be a mistake for Verzelini—it is no worse than some mis-writings of spoken names. Verzelini was then fifty-one, and Leonard(o) may be his youngest son, born after he had settled in England. On 1 October 1599 Nicholas Vercelyne, no doubt a son of Verzelini, is included among 'Straungers' resident in parishes of the Tower Ward (incl. St. Olave's), in a list of Lay Subsidies.

partly as a country residence and partly, I think, to grow wood for his furnaces. After his death Valons went to his eldest child and co-heir, Elizabeth, and to her husband. On 6 July 1584, at St. Olave's Church, Hart Street, Elizabeth Verzelini was married to Mr. Peter Manning, Gentleman and Esquire of Trowmer in the parish of Downe.¹ She returned to London to have her first baby under her mother's auspices. The child was called Jacob after his illustrious grandfather, and was christened at St. Olave's on 31 October 1585.² In the time of Charles I the Valons estate passed to a relative of Peter Manning, Mr. Ranneph Manning of London, who bore arms—argent a chevron gules between three cinquefoils of the second—and remained in his family until 1718. In that year it was alienated and it was later known as Hill Park.

Soon after Elizabeth's wedding her sister Katherine married Mr. John Nowell, Dr. of Medicine of Trinity, Minories, London, also at St. Olave's, 20 February 1586.³ Twelve years later at the same church her sister Mary Verzelini married Michael Palmer, a man with no qualifications.⁴ Clearly neither Katherine nor Mary married so well as their father's favourite, Elizabeth. But the three marriages at St. Olave's show that the house in that parish was still the family headquarters even after Verzelini's monopoly was determined (1592); and as late as 1603 a 'glassman' who died in the parish was described as 'out of Mr. Jacob'. It may be that Verzelini was still the effect-

¹ St. Olave's Registers: 'July 6 1584 Mr. Peter Manninge, geñ, and Elizabeth Verzelini ancilla, P l'n'iam' (collated with T. Philipott, *Villare Cantianum* (1st ed. 1659), 2nd ed. 1777, p. 359, and with E. Hasted, *Hist. of Kent*, i, 1778, p. 386).

² 'Oct. 31 1585 Jacob s. Peter Manninge, gent, none of this parish, born in Mr. Jacobes howse' (*ibid*).

³ 'Feb. 20 1586 Mr. John Nowell and Katherin Verzelini, anc', p l'n'a'' (*ibid*; cf. *Marriage Licenses issued by the Bishop of London*, i, 1887, p. 158).

⁴ 'Feb 5 1598 Michael Palmer & Mary Versalene, ancill'' (*ibid*).

ive man from 1592 till his death, and Bowes only an important dummy (cf. p. 107, the Barbara Potter glass of 1602).

The following is a new list of glassmakers who lived in the parish of St. Olave's between 1575 and 1604 and may be regarded as Verzelini's men:

Barnardine, 'stranger, one of the glassmakers', had a son, Jammary, christened 13 December 1577.

Marco Guadoe, 'stranger, glassmaker', had a daughter, Elyzabeth, christened 20 December 1582.

Nicholas Ballarine, had a daughter, Mary, christened 22 January 1582. He was a member of the famous Murano family to which Domenico Ballerini belonged.

John ('Jno') Riggott, 'stranger, glassmaker', had a daughter, Katharine, christened 28 February 1584.

John Riggol (= Riggott), 'glassmaker', had a daughter, Mary, christened 18 September 1586.

John Riccoll (= Riggott), 'glassmaker', had a son, Jacob, christened 11 February 1587.

John Ricoll (= Riggott, Riccoll?), 'glassmaker', had (another?) daughter, Mary, christened 13 February 1591.

Omnia Bene, 'glassmakr', lost a daughter, Angell, 'by a broose in hir backe', buried 13 June 1589.

Lybira More (= Moro), 'glassmaker', was buried 8 September 1593. The Moro family were one of the great glass dynasties at Murano.¹

John Rignall, 'glassmaker, stranger', was buried 22 September 1593.

¹ Zanetti, *Guida*, pp. 264 seq.

ENGLISH GLASS

Henry Bridgman, 'glassmaker', had a son, Henry, christened 23 March 1594.

'One of the glassmakers', probably Vincent Gilio, who had lived in St. Olave's since 1571, lost a son, Vinsinso Jilio (Vincenzo Gilio), buried 29 January 1594.

John Tybball, 'clarke of the glass house', was buried 28 October 1594.

Allavizo, 'a glassman out of Mr. Jacob', was buried 26 September 1603.

Thomas Deleer, 'a glassman', was buried 24 September 1603.

Vincenzio Serino, 'glasmakr', had a son, Vincentio, christened 5 August 1604. He probably belonged to the famous Serena family of Murano.

This list is revealing of the colony which clustered round the 'house' and the 'glass house' of its leader. Verzelini was known and honoured as Mr. Jacob, a simpler name than Verzelini. His men found him a good master, and they settled and married in his service. They named their children after him or after his daughters. What better testimonial could he have? Several of the later notices record the deaths of ageing men who had been with him since London was unfriendly and prosperity was still to win.

One or two Italians quitted the glass colony in London and lost their skill by contact with the forest code. They may have called their stuff 'Venice glass'; but their trespass did not matter to Verzelini. He had the expressed approval of the nobility and gentry and the only high-class business in the country. And on two occasions at least the Privy Council showed him that their protection was worth having.¹ These and some other considerations have made

¹ In 1579 Verzelini appealed to the Privy Council against a merchant who had

it possible to attribute five glasses¹ to Verzelini's men (Nos. 1-4 and No. 6), and one to his immediate influence (No. 5; for date cf. p. 103). In the case of Nos. 7 and 8 the attribution is uncertain but possible. The decoration of Nos. 1-5 is diamond-engraved.

1. *The A. F. Glass*.—Wide shallow hemispheroid bowl (diam. $5\frac{1}{8}$ in.); short broad acorn-shaped stem blown hollow and joined visibly to bowl and foot; tall conical foot with wide flat rim, of which the edge is narrowly folded downwards. The metal is slightly bubbly and grey-black in tone. H. $5\frac{1}{8}$ in. The decoration is confined to the bowl and divided into three zones:

- (1) A circuit of hatched gadroons, the circuit equally divided by two leafy sprigs.
- (2) A border of hatched arabesque foliage broken by three bracket panels containing respectively: (a) the initials *A* and *F* joined by a lover's knot; (b) the same, repeated; (c) the date 1580.
- (3) A border.

Probably a betrothal glass. Formerly in the possession of Horace Walpole. Broken and repaired. *Wilfred Buckley Collection*.

infringed his patent in regard to 'a certaine chest and drifotte of glasses sold unto one in Leicestershire . . . thereby forfeited as foreign bought and sold'. The Lord Mayor was instructed to stop the abuse (*A.P.C. n.s.*, xi, p. 155). On 19 February 1580/81 he complained against Sebastian Orlandini (for whom see p. 120) and John Smithe, who 'have verie lately sett up a furnace at the gon-powder mille by Ratcliffe' (London). Barnard Randall, Thomas Gardner, and 'the Connestable' were ordered 'to cause the furnace to be defaced in their presence'; attempt not to be repeated under threat of punishment (*ibid.* xii, 336). At the New Year 1575/76 the Queen accepted from a Mr. West a present of 'some litell beare [beer] glasses in a case of mother-of-pearl and in a box of crimson silke embroudered with golde and silver' (*Progr. Q. Eliz.*, 1823, ii, 2). These may have been Verzelini glasses. A high-class job like these or the Kenilworth glasses of the same year, would be a good advertisement for Verzelini and may have helped to get him his monopoly. Cf. 'fine drinking glasses' on p. 99.

¹ For a short bibliography of these five glasses and an account of No. 6 see *Burl. Mag.* lvi, 1930, pp. 256-7.

2. *The Dier Glass*.—Deep rounded funnel-shaped bowl (diam. $3\frac{3}{4}$ in.); hollow blown stem with large fluted bulb between two small knops, visibly joined to bowl and foot; plain spun foot without fold. The metal is slightly bubbly and grey-green in tone. H. $8\frac{1}{8}$ in. The decoration of the bowl is divided by narrow borders of loop-line into three zones containing:

- (1) A stag and a unicorn pursued by two dogs, separated by single trees.
- (2) A border of arabesque foliage broken by three bracket panels containing in hatched characters:
(a) *JOHN*; (b) *DIER*
YONE; *1581*; and (c) the Royal Arms as borne by Queen Elizabeth.
- (3) A border of hatched gadroons.

Round the centre of the foot (upper side) is a circuit of hatched gadroons. Shop condition. Probably made and engraved for a marriage. *Wilfred Buckley Collection*.

3. *The K. Y. Glass*.—Deep oviform bowl (diam. 4 in.); hollow urn-shaped mould-blown stem with radial ribs above four lion-masks; spun foot with narrow downward fold. The metal is very bubbly and grey-black in tone. H. $8\frac{3}{4}$ in. The decoration is confined to the bowl and is divided into four zones:

- (1) A fringe of cresting.
- (2) A border containing the words *IN · GOD · IS · AL · MI · TRVST* in hatched lettering. The remaining space is filled with a chain of almond loops (as in No. 5). The legend is, and may be here, the motto of the Pewterers' Company.
- (3) A border of arabesque foliage broken by three oblong panels containing: (a) The initials *K* and *Y* joined by a lovers' knot; (b) a merchant's mark;

(c) the date 1583 above a leafy sprig (as in the top border of No. 1).

(4) A border of hatched gadroons.

The foot is a replacement and is chipped. Probably a betrothal glass. *Formerly in the Clements Collection.*

4. *The G. S. Glass.*—The bowl is oviform (as No. 3) and divided into three zones by two horizontal trails of clear glass, each trail edged with threads of opaque-white glass; short knopped stem blown hollow; plain spun foot. H. $5\frac{3}{4}$ in. The three zones are filled with decorations as follows:

- (1) Border of arabesque foliage, edged with loop-lines and completely severed by three bracketed reserves enclosing: (a) The initials G and S joined by a lovers' knot; (b) the date 1586 in hatched characters; (c) the date 1586, repeated.
- (2) Border containing the words: IN : GOD : IS : AL : MI : TRVST (as in No. 3, but with double stops). The vacant space is filled with a piece of arabesque foliage.
- (3) Border of hatched gadroons below a circuit of V-shaped devices (cf. leafy sprigs of No. 1).

Round the centre of the foot (upper side) is a circuit of hatched gadroons. The lip of the bowl and the knop of the stem were originally gilt (cf. No. 6). Bowl cracked. Probably a betrothal glass. *British Museum.*

5. *The Barbara Potter Glass.*—Short bell-shaped bowl. Very tall stem composed of: (i) (above) Knop and baluster (solid); (ii) hollow urn-shaped mould-blown stem with radial ribs above four lion-masks. Spun foot with folded rim. The metal is grey-black in tone. H. $8\frac{1}{8}$ in. Plate XVI b. The decoration of the bowl is divided into zones by three narrow bands of looped line:

- (1) A fringe of hatched trefoils supporting linear festoons.

- (2) Border with the legend in hatched character: *BARBARA POTTERS · 1602 ·*, the surname probably in the possessive case.
- (3) Border of almond-shaped loops alternately hatched and containing rosettes (cf. No. 3, zone 2).
- (4) Circuit of widely spaced leaf motives. The foot is engraved with widely spaced wreath of leaves. The lip and the lower stem were originally gilt. Shop condition. Probably a christening-glass. *Victoria and Albert Museum.*

6. *The Winifred Geare Glass.*—Deep oviform bowl (diam. 4 in.), as Nos. 3-4; hollow, mould-blown urn-shaped stem with vertical bands of laddered pattern, originally gilt (cf. No. 4);¹ plain spun foot with narrow fold. The metal slightly bubbly, yellowish in tone, and blown thin. H. 7½ in. Plate XVI *a*. The decoration is entirely gilt and now much worn:

- (1) Round the lip a ¼-in. border, plain. (cf. Nos. 4-5).
- (2) Round the middle are these: (*a*) The arms of the Vintners' Company (sa. a chevron between 3 tuns arg.); (*b*) the name WENYFRID GEARES (in the possessive case and probably written by a gilder accustomed to Netherlandish spelling) above a fleur-de-lys, an Irish harp, and a crowned dolphin; (*c*) a shield charged with a bend between two vine branches, each bearing a bunch of grapes: not identified and probably canting; (*d*) the date 1590, above a sword (from the arms of London).

¹ Laddered stems of the Wenýfrid type are excavated fairly often, e.g. Guildhall No. S.339 (before 1632) and No. S.M.VII 40; Newport (Mon.) Mus., local, H. 2 in.; Bacon Coll. No. 270 (find-spot not recorded); Yorkshire Mus. (local). Stems of the K Y type occur at Canterbury Mus. (Brent Nos. 2603 and 2605); Peterborough Mus. No. 17-2-91 (from Caster); South Shields (local); Guildhall (several). These are coarser than Venetians and easily distinguished.

- (3) Round the lower part, a border edged with loops (above) and inverted cresting (below), and containing the words DIEV ET MON DROYT.
- (4) On the foot, the Garter motto *Honi soit qui mal y pense*, in script.

Shop condition except for the gilding. Probably a christening-glass (cf. No. 5). *The Duke of Northumberland*.

7. *The Vickers Glass*.—Hemispherical bowl (diam. $4\frac{1}{2}$ in.). The stem is composed of a broad disc knop between balusters and is solid. Spun foot repaired with mounts. The metal is not bubbly and is black in tone. H. $5\frac{1}{2}$ in. The glass is undated and undecorated. It is contained in a gilt leather case (of early eighteenth-century date) which was made to fit it and shows that the glass originally had a cover. It is accompanied by a circular piece of paper bearing the following words in calligraphic MS. of eighteenth-century character:

This Glass
belong'd to Queen Elizabeth,
out of which she drank:
IT HAS BEEN IN
Mr Vickers's Family
Time out of Mind
In 1726, I was Married to
Mr Vickers.

Probably a Progress glass.¹ . . . *H.M. The King*

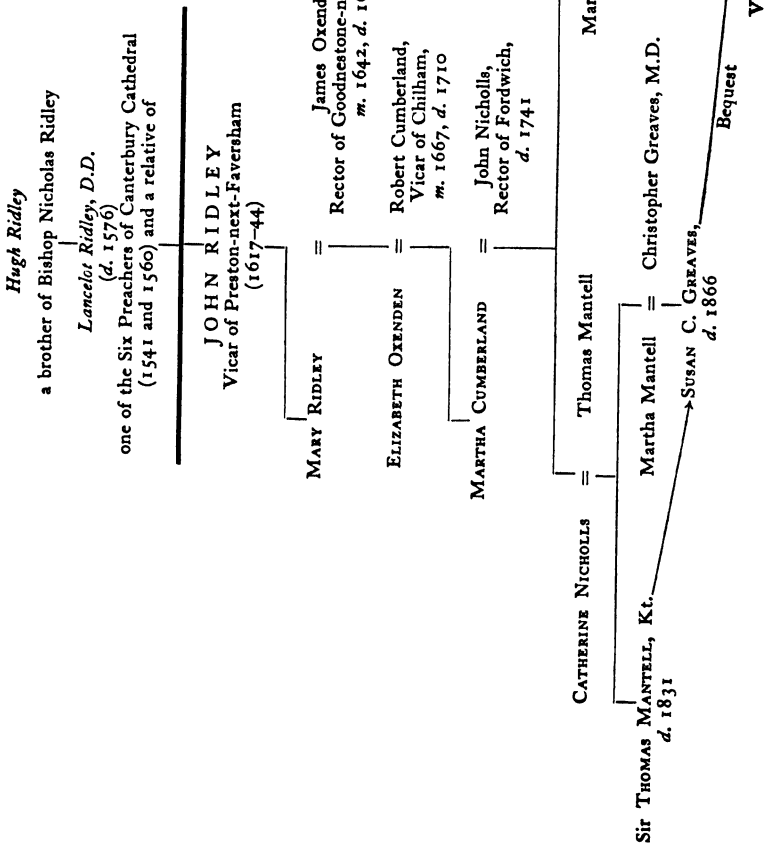
¹ See the vague and inaccurate description by its discoverer, the Newbury antiquary Walter Money, F.S.A., in *P.S.A.*, 2s, ix, 1883, p. 357, and cf. *Art*

The last of the series is imperfect and undecorated, but it has the longest pedigree of them all and two definite features connecting it with the Verzelini group:

8. *The Ridley Glass*.—The bowl is bell-shaped, similar in form to the bowl of No. 5, but slightly deeper and slightly more waisted. It is divided into four horizontal zones by three pairs of trailed threads forming three belts (compare the two belts of No. 4). The stem and foot are missing and have been replaced, at a later date than that of the glass, by a silver stem and foot, whence rises a support which encircles the bowl between the two lowest belts. The glass is of purple metal. Height of bowl $4\frac{7}{8}$ in., top diam. $5\frac{1}{4}$ in., total height (including silver stem and foot) $7\frac{3}{4}$ in. The glass has a traditional association with Bishop Ridley. In the adjoining pedigree, which I owe to the courtesy of the Rev. C. Eveleigh Woodruff of Canterbury, this connection is only valid as far as John Ridley. Beyond him it is conjectural. *Formerly in the Kirkby Mason Collection*.

In its general character the decoration of the five engraved glasses belongs to a professional style, practised with varying differences by migrant diamond-engravers in Italy, Germany, France, and the Netherlands. In detail it stands apart from other diamond work of the period and it shows a chain of resemblances suggesting one engraver

Journal, 1890, p. 28 and *Tudor Exhibition Catalogue*, 1890, No. 1008; Harts-horne, p. 163; *Wine Trade Exhib. Cat.* 1933, No. 265 (description inaccurate) and frontispiece, a good photograph, but without case or document. The glass was bought by Queen Victoria about 1890–91. If the glass is connected with the Queen's visit to Newbury in Sept. 1568 (for which see Money, *Hist. of Newbury*, 1887, p. 213), as on date-form it could be, then in view of its metal it is probably by Jacopo Pasquetti of Antwerp (for whom see L. Guicciardini, *Descritt. di . . . Paesi Bassi*, Antwerp, 1588, p. 105). But there are parallels for the stem form in apparently English-made stem fragments, e.g. Canterbury Mus., Brent Coll. No. 2542. For the 'Queen Elizabeth's glass which was his grandfather's' of John Whitfield of Canterbury (d. 1691) see E. Hasted, *Hist. of Kent*, iv, 1799, p. 427.



of all five glasses. Between 1580 and 1602 we hear of only one engraver of glass who worked in England. His name was Anthony de Lysle. He came from the dominions of the King of France and took out papers of denization on 19 March 1582. He is not likely to have taken that step unless he had been here several years (like Verzelini himself), and had had time to make a connection. He engraved on pewter¹ as well as on glass, and for a time at least he was working in the Liberty of St. Martin le Grand without licence from the Pewterers' Company, whose motto occurs on two of the five glasses. He was a free-lance, but he may have done special orders on commission for Verzelini or for one of the London glass shops. In 1588 Robert Dudley, Earl of Leicester, possessed 'eight graven dishes of glass about the brims'² and 'two graven bole glasses'. These items in the Kenilworth Castle inventory are, I believe, the first English allusion to

¹ He also got into trouble for gilding it to look like silver gilt.

² *I.e.* flat glass dishes with wide engraved brims. The type is well known, but I do not know of English survivors. See the Inventory of plate '. . . of the Earle of Leycester at Kenilworthe, in the charge of Thomas Cole, upon a view taken in 1584, and perused since by W. George, Ed. Blounte 1588', printed in J. O. Halliwell, *Ancient Inventories*, 1854, pp. 115-16. Other glass items are: (1) Under the head 'Glasses'; 'Ffyve plaine bole glasses, Ffyve indented bole glasses; two graven bole glasses; twelve beare glasses of several fashions, iii with covers; two plaine taper glasses with covers; two others ribbed taper glasses; an embossed glass with a cover; two glass ewers'. (2) Under the heading 'Glasse Dishes': 'Tenne glasses dishes with the sinque foyle on the brims. Twelve great standing indented bole glasses for creame, A deep standing glass with a cover, Ffyvteen glasses brode brimed and narrow bottoms, Ffworthene greate deepe glasses, viii of them plaine, A dozen of glass dishes of one sorte, Two dozen, and iiij dishe glasses of another sort'. Verzelini's prices, so far as they are known, were:

Ordinary glasses, large . . .	7s. per doz.
Ordinary glasses, small . . .	4s. "
Plates . . .	7s. "
Mortars . . .	4s. "

Ordinary = drinking-glasses; mortars = small bowls for night-lights.



(a) *The Winifred Geare glass* (see p. 158). English (*Verzelini*); dated 1590. H. 7½". The Duke of Northumberland.



(b) *The Barbara Potter glass* (see p. 107). English; dated 1602. H. 8½". V. and A. Mus.



(c) *Romer, lead crystal, with 'rib'd' decoration. Mark, a blob with a raven's head in relief. Made at glasshouse of George Ravenscroft in the Savoy, London; c. 1676-78. H. 6½". Wiltred Buckley Coll. See p. 159.*



(d) *Romer, lead crystal, decoration. Mark, a blob with a raven's head in relief. Made at glasshouse of George Ravenscroft in the Savoy, London; c. 1676-1678. H. 6½". Private Coll. See*

diamond-engraved glasses. They do not prove where the Earl's glasses were made. But if the date 1588 is related to the dates of the four glasses (1580, 1581, 1583, 1586), the dates of Verzelini (1571-1575-1592) and the dates of Anthony de Lysle (1582-), it is not improbable that the Queen's favourite bought some of his glasses from the Queen's glassmaker and that Anthony de Lysle engraved them. If the phrasing of the two items is compared, 'two graven bole glasses' must surely mean two drinking-glasses with graven bowls of the kind described above.

CHAPTER IV

THE PERIOD OF MONOPOLIES

THE ensuing period 1592-1660 is sharply divided by the *Proclamation touching glasses* of 23 May 1615 and the consequent introduction of coal furnaces. The racket in glass began at Broad Street with Sir Jerome Bowes. On 5 February 1591/2 he received a monopoly for a period of twelve years from the determination of Verzelini's monopoly and in similar terms, but he was entitled to the sole manufacture of *all* glass vessels and also received the sole right to import glasses from Murano and elsewhere on the continent. For these greater privileges he paid the Queen 200 marks per annum, whereas Verzelini had paid nothing. Bowes was an old soldier with a violent temper and a great scorn for foreigners. These qualities had made him a success as Ambassador to Russia, but they did not suit the Italian gaffers who had worked for a good master. Sir Jerome, if I read the movements right, sacked them and sent to Antwerp for some more. He must have increased his volume of business and he was popular in London. In spite of his rent he was able to retain Verzelini's scale of prices (p. 112), and in 1597 he was presented with a warehouse by the parishioners of St. Ann, Blackfriars. When his licence expired (1604) he obtained a renewal of it, but not an effective one. His business was killed by the new racket in coal processes. So ended the tradition of Verzelini.

THE PERIOD OF MONOPOLIES

Between 1604 and 1615 domestic-and-fancy glass-making is a tale of licences and company promotion which need not be repeated here.

Sir Robert Mansell was a Welshman with the manners of an admiral and the brain of a financier. He was born in 1573, a son of Sir Edward Mansell of Margam, Glamorganshire, by his wife Lady Jane Somerset, younger daughter of the Earl of Worcester. As a young naval officer he won a knighthood under Lord Howard at Cadiz (1596), and in 1602 he formed one of the escort which conducted Sir Walter Raleigh from London to his trial at Winchester. He was afterwards promoted Admiral and was in command of the Narrow Seas fleet from 1606 to 1610. For the last of these years he secured a more lucrative appointment as Treasurer of the Navy, but there is no reason to suppose that he was abnormally corrupt in the management of this office. He joined the board of Sir Edward Zouche and Co. early in 1615 (N.S.), and finding that business absorbed his interest to an increasing extent, he was placed on the retired list at his own request in 1618. His devotion to business was interrupted on 20 July 1620, when he was recalled to take command of an expedition against the pirates of Algiers, with Hawkins as his Vice-Admiral. During his absence, about a year, his affairs were successfully managed by his wife Lady Mansell, a determined woman. On his return he set about eliminating his co-directors by 'agreement and contract'. On 22 May 1623 he secured a new grant of letters patent from the King, 'taking upon himself the execution' of those granted to Zouche and Co. in 1615 and obtaining the right to 'use exercise practise sett up and putt in use the arte feate and misterie of melting and makeing of all manner of drinking glasses broade glasses windowe glasses looking glasses and

all other kinds of glasses, bugles bottles violls or vessels whatsoever made of glass of any fashion stuff matter or metal whatsoever with sea cole pitt coale or any other fewell whatsoever not being tymber or wood'.

In the exercise of these letters Sir Robert organised the glass industry on a national scale, and from a purely industrial point of view he did it great benefits. He developed the coal-mining industry on the Tyne for the service of local glasshouses, and from Newcastle and from Scotland he transported sea-coal for his London furnaces. There is little doubt that he encouraged the mining of 'pit coal' in South Wales, his own home, in the Forest of Dean, and in Staffordshire. He imported barillia from the Mediterranean. He was the first of the glass magnates to bring Stourbridge clay into general use for making siege-pots, and he also imported clay from Spa (Germany), Paris, and Rouen. At Newcastle a local clay was used. The building of covered pots to suit coal combustion encouraged the making of an easily fused glass, and was a condition, though not the cause, of the lead crystal later perfected by Ravenscroft (p. 152). During the period 1615-56 Mansell started or absorbed glasshouses at London, Greenwich, Lambeth, Newcastle-upon-Tyne, Swansea, Milford Haven, Newnham-on-Severn, Stourbridge, King's Lynn, Purbeck Island, the Trent Valley, and Wemyss in Fifeshire. His greatest difficulty was that he and his administrative staff knew nothing about glass, and in the early stages of his patent there were several complaints that the metal of his plate glass was of poor quality; in 1621 it was described by Inigo Jones as 'mixed good and bad and very thin in the middle'. He was entirely in the hands of his 'servants', and it says much for his tenacity that he defined the main branches of the glass industry in the form in which we know them to-day.

The branches of the industry under Mansell are clearly indicated in the passage which I have quoted from the letters patent. 'Broade glasses' refer to glass plates for windows made according to the Lorraine code by blowing, splitting, and unrolling a cylinder. The term 'windowe glasses', distinguished from 'broade', points to crown-glass of the Normandy men, many of whom were then working in England. They offered a stout resistance to Mansell's domination, but some of them certainly worked for him.

The allusion to 'looking glasses' is the first definite evidence for the manufacture of mirror plate in England. Both in Mansell's time and after the Restoration mirror plate caused much anxiety to English manufacturers; but Mansell introduced specialists in this branch of the trade before 1624, and there is every reason to think that he was successful in the undertaking.¹ This glasshouse for mirror plate was in Lambeth. Spectacle glasses² and lenses were not mentioned in Mansell's patent of 1623, but Mansell, in that document, refers to a certificate of merit from the spectacle makers, and it is likely that lenses were made at Lambeth.

The bottle industry ('bottles') was also a creation of the Mansell régime and produced some admirable blown shapes. It seems to have developed from a family of light, light-coloured, thin-blown bottles represented in the Mortimer Museum (Hull), the London Guildhall, and

¹ On 6 September 1618, in the 'Libertie of the Clinck,' just south of London Bridge, 'Nicholas Closson, looking glass maker; *b.* at Amsterdam, under his Excellency; frequenteth the parish ch. of St. Saviour's in Southwark and doth commonly keep 4 servants, Englishmen'. On the same date was living in Broad Street 'Jacob van Leisnelt, lokinge glasse maker, *b.* in the city of Antwerp under the Archduke'. See *Certificate of Strangers . . . taken 6 Sept. 1618*, ed. W. D. Cooper, London 1862, pp. 97, 99. In a dispatch of 27 March 1621 (*S.P.V. Cal.*, 1621-21, p. 212, No. 301) the Venetian ambassador refers to 'looking glasses of which they make a quantity here'.

² Lenses of all kinds.

elsewhere. Comparison with Lorraine glass suggests that these vessels date from about 1600. It is uncertain when they were first made specifically for wine,¹ but in shape they resemble a famous thick-blown wine-bottle dated 1657 and in the Northampton Museum. The later development of the wine-bottle is as follows:

Stage I.—About 1630–60. Tall necks and spherical bodies. The earliest extant example is probably a bottle in the Ashmolean. It bears a seal with the vintner's brush and three tuns (for a tavern called the Three Tuns, formerly in The High) and the initials H. B. for Humphrey Bodicott, licensee of that tavern 1639–60. The earliest dated example is the bottle in the Northampton Museum already mentioned.

Stage II.—About 1650–85. Neck slightly shorter, body cup-shaped. A typical example, and the earliest with a date, is Mr. Francis Berry's bottle with date 1661 and bust of Charles II (*Wine Trade Exhib. Cat.*, 1933, Pl. LXXXVIII (A)).

Stage III.—About 1680–1710. Neck very short, body dome-shaped, the entire vessel wide and squat. Examples frequent.

Stage IV.—About 1710–60. The bottle grows in stature, necks becoming taller; bodies also become taller and acquire straight slanting sides, and eventually almost vertical sides.

Stage V.—From about 1750. The cylinder bottle, the result of binning, and later of mould-blowing.

Cellarets were expensive and unlikely to be filled with common bottles:

Nov. 10 1624, *XIX quarters of seck [sack] to fill the cellers of glasses XIX s.*

¹ Sir Kenelm Digby (1603–65) was one of the first gentlemen who ordered glass wine-bottles for serving.

THE PERIOD OF MONOPOLIES

1624,—*For 2 sellers of glasseis of 8 pottils a peace
XXVI's viii d.*¹

The term violls or vials was sometimes applied to small bottles of fine glass:

1629, *For two viall glasses for vinegar, of Venice glasse
iii S.*; ²

but in Mansell's patent it refers principally to the small apothecary's phials or 'medicine bottles' of green bottle-glass, hour glasses, containers for chemicals and the like. Here Mansell did not innovate, but developed a manufacture which had existed in England since the fourteenth century.³

The steeple shape already noticed (p. 85) gave place to bulging shapes or cylindrical bottles not made in a mould. These two varieties survive in large numbers and indicate that the trade in them was extensive from the accession of Mansell until the middle of the eighteenth century.

'Bugles' were beads of black or dark-green glass:

'Tis not your inky brows, your black silk hair
Your bugle eyeballs nor your cheeks of cream
That can entame my spirits to your worship⁴. . . .

Autolycus cried them in 1611:

Bugle-bracelet, necklace-amber
Perfume for a lady's chamber. . . .

We first hear of them being made in 1579, at Bickley

¹ *Howard Books*, pp. 206, 222,

² *Household Books of Lord William Howard at Naworth Castle*, ed. G. Ormsby, 1878, p. 266 (1629).

³ Cf. Chaucer, *Canon's Yeoman's Tale* (about 1387), ll. 238-41:

'And sondry vessels maad of erthe and glas,
Our urinals and our descendories,
Violes, croslets, and sublymatories
Cucurbites, and alembykes eke
And othere swiche, dere y-nough a leek.'

⁴ *As You Like It*, III, v, 46-8, suggesting that bugles were usually of *Waldglas*, black or dark green.

(near Rye), by two Italians (Sebastian Orlandini and Sondaye Exanta), a Frenchman, Godfrey Delahay, and an Englishman called Okes, who had a glasshouse in partnership. They made 'bugles, amells¹ and glass in collers',² and no doubt sold them to the pedlars. Neri's *L'Arte Vetraria*, published in 1612, and intelligible to James Howell, if not to Mansell, provided many useful formulae for coloured pastes, and Mansell probably intended to supplement the native black 'buegle' with coloured beads made by his Venetians. About 1635 Sir Nicholas Crisp (*d.* 1666), the 'little old faithful farmer' of Charles I, muscled in on Mansell and secured a patent 'for the sole making and vending of Beads and Beaugles'.³ Here 'beads' correspond with the coloured beads of Exanta and Orlandini, 'beaugles' with Okes and Delahay. Sir Nicholas made his money in slaves and other African commodities, and on 22 November 1632 he secured, by royal proclamation, the sole rights of trade to Guinea. Hence his racket in '*verres de voyageurs*'.

Mansell's principal glasshouse for 'drinking glasses' was in Broad Street. When he assumed sole responsibility (1618) for the patent, one of his first acts was to introduce his own nominee as manager ('steward'). James Howell (1595-1666), later famous as the author of *Familiar Letters*, and a friend and fellow countryman of Mansell, was appointed to this post shortly after leaving Oxford. He held it for some months, but he knew nothing about

¹ Amells = enamels.

² Glass in collers = either necklaces or coloured glass. 'Amells' imply colours, anyway.

³ *J.H.C.* ii, p. 33. On 20-21 November 1640, when the political situation was getting tense, he was summoned to attend before the Committee of Privileges to surrender several of his rackets. 'Beaugles' is apparently a false derivation from *beau*. Cf. *S.P.D. Cal. Chas. I*, 1634-35, p. 446, No. 99 (28 January 1634-35): 'Crispe his [Mansell's] tenant endeavours to gain a branch of the patent and offers for the whole'.

glass and he found the heat very trying. He persuaded Mansell to give him the job of travelling agent to collect men and materials in Italy and Spain. He wrote to his father in some elation on 1 March 1618: 'the business being of that nature that the workmen are to be from Italy, France, and other countries, there is need for an agent abroad for this use, so that I believe I shall have employment in all those countries before I return. Had I continued still steward of the glasshouse in Broad Street, where Captain Francis Bacon has succeeded me, I should in a short time have melted away among those hot Venetians, finding myself too green for such a charge'. The hot Venetians included Angelo Barcaluso, Barnarden, Frauncis Rosse, Frauncis Booteso, all of them resident in Broad Street on 6 September 1618 and described as 'glassmaker[s] born in the city of Venice under the Duke'.¹ To their number we must add Giovanni dell' Acqua, who belonged to one of the best-known dynasties at Murano and had entered Mansell's service before 1618.² Only one of Mansell's men bears the same name as any of Verzelini's men, and probably they first came to England in 1615.

Young Howell was a success as a foreign agent. He began his enquiries in the Netherlands, and at Middelburg he made the acquaintance of Antonio Miotti, a Venetian of good 'glass' family who 'for a long time'³ had been master of a crystal glasshouse in that town. Howell per-

¹ *Certificate of Strangers taken* . . . 6 Sept. 1618, ed. W. D. Cooper, London 1862, p. 88.

² *S.P.D.*, 20 September 1621.

³ From July 1606 he managed a glasshouse at Middelburg backed by the Amsterdam millionaire Dirk van Os and a company of subscribers. By 1610 the glasshouse was his own property (Hudig, *Das Glas*, 1923, p. 27). At this time 'drinking glasses' and 'painted drinking glasses' were being exported from England to the East. Dirk van Os had large interests in the East India trade. For a glass attributed with strong reason to Miotti before he came to England, see Pl. XV c. and Hudig, p. 27. It is the type called 'beare glasse' in English notices of the period.

suaded him to go to London and gave him a letter of introduction dated 6 June 1619, in which he described him as 'one of the ablest and most knowing for the Guidance of a Glassework in Christendom'. Miotti was what Mansell needed most, a man who understood the routine of a glasshouse and was accustomed to command. He took charge of the work at Broad Street, but he was of the same metal as Verzelini and he clearly did not get on with the business manager, a mere soldier, or with his employer's interfering wife. Meantime Howell went on to Spain to arrange for a regular supply of barillia. He wrote home in glowing terms of this strange vegetable (27 March 1621) and then proceeded to Venice. He evidently had introductions from Miotti and obtained two more men for Broad Street. He wrote of them to Mansell on 30 May 1621: 'the two Italians, who are the bearers hereof, by repute here, are the best Gentlemen-Workmen that ever blew Crystall, one is allied to Antonio Miotti, the other is a cousin of Mazalao'. By this time experience had changed his superior attitude to hot Venetians. He returned to London the same year to find Mansell hunting pirates in the Mediterranean, and Howell Senior adamant on the subject of his future. He wrote to Dr. Mansell of Jesus College, Sir Robert's nephew and an Oxford friend of his own (1621): 'My father fears that this glass employment will be too brittle a foundation for me to build a fortune upon; and Sir Robert, being now, at my coming back so far at Sea and his return uncertain, my father hath advised me to hearken after some other condition'. Having achieved a grand tour at Mansell's expense, this enchanted but capable young man passes from glass history to higher things. He had seen more of the glass industry than any Englishman at Broad Street, and Mansell had every reason to regret his loss.

In the summer of 1621 Mansell returned to deal with the situation at home. He obtained a further instalment of Venetians, including Benetto Seguso and Rocco Zanon,¹ through the agency of Francisco Mazzola, a Venetian already in his employ and no doubt identical with the Mazolao of Howell's letter (30 May 1621). The Venetian Ambassador, between the devil of the English Government and the deep sea of his own, described Mazzola as 'a man without religion and with all the vices', and blamed him 'for bringing hither almost all the glass workers of Murano'.² Mansell lost his men as fast as he obtained them. There was discontent among the Broad Street gaffers before the end of 1620, and advantage was taken of it by a company which had obtained a Scottish monopoly. By 20 January 1620 Giovanni dell' Acqua had been suborned to go to Scotland by one of their agents, Pickayes, and had returned to London empty-handed to look for his old job.³ During the following year the Scottish company employed an Italian agent, Leonardo Michelli, 'a Venetian of low birth and a thorough rascal', to start their Scottish furnaces, and Mansell's men were again suborned. The Venetian Ambassador refers to the episode in a dispatch of 29 April 1622, and remarks that 'the greater part of the men who worked here [London] have betaken themselves thither [to Scotland] perhaps in the hope of having flints of the Ticino by the ships which will go from our [Italian] ports'.⁴ The same year Seguso and Zanon decided to throw themselves on the mercy of the Republic. Antonio Miotti was becoming more and more unhappy. He could

¹ *S.P.V. Cal.*, 1621-23, No. 434 (29 April 1622), p. 434. Rocco Zanon was probably of Altarist blood settled at Venice. San Rocco was the patron saint of glassmakers at L'Altare.

² *S.P.V. Cal.*, 1621-23, No. 120 (6 August 1621), p. 100.

³ *S.P.D. cxiii*, Nos. 28, 28 (1), 28 (2), 20 January 1620 (*Cal.*, 1619-23, p. 114).

⁴ *S.P.V. Cal.*, 1621-23, No. 434, p. 309.

have run the Broad Street glasshouse with one hand if he had had the chance, but in four years he lost patience with Mansell and Bacon and the procession of gaffers. He returned to the Netherlands in 1623 and did very well in the last years of his life.¹ In 1627 Mansell stopped the rot at Broad Street by purchasing the Scottish monopoly.

About 1630 Mansell began to despair of keeping his Venetians and went to great expense, as he says, to obtain an entire set of glassmakers from Mantua. There is little doubt that these men were Altarists and that the expense was partly the usual payment to the *Consoli Vetrai*, who governed the *Università dell' arte Vitrea del luogo dell' Altare*. Mansell's company probably brought to England several families who later left their mark on English glass; the best known are Da Costa and Dagnia (p. 156 and p. 161).²

¹ He got a glasshouse and a privilege at Brussels, backed by a rich Antwerp merchant, J. B. van Lemens. He also controlled glasshouses at Namur and Antwerp. These closed down in 1629, shortly after his death (Hudig, *Das Glas*, 1923, pp. 17-18).

² According to a probable tradition (see A. Amati, *Dizion. corografico*, 1868-80, s.v. Altare, and Enrico Bordoni, *L'industria dell' vetro in Italia*, Savona 1884, p. 37), the Altarist glassmakers came from Normandy and Brittany about the 9th cent. and obtained the *luogo dell' Altare* (just north of Savona) from the Signori di Monferrato in token of their art. They brought with them the glassmanship of Roman and Merovingian Gaul. They were several times ennobled or privileged by the Marchesi di Monferrato, notably in 1495 and in 1512; and it was probably about this date that they adopted *cristallo* from Venice. But they continued to work in the Northern code of *Waldglas*, and it was in virtue of this that they were so much employed in Germany and the Netherlands; *Rysselsche nach Art der Altaristen* are mentioned at a Kiel glasshouse in 1655 (*Bulletin*, u.s. xxix, 1890, p. 112). Nine families of their original *noblesse* have bilingual names:

Buzzone	—	Boussone	Saroldi	—	Saraud
Bormioli	—	Borgnolle	Varaldi	—	Varaud
Bordoni	—	Bordone	Perrotti	—	Perrot
Brondi	—	Bréaund	Biancardi	—	Blanchard,
Racchetto	—	Raquette			

and some of them had returned to France at least a century before the Venetian dispersion began.

In a statement of his costs issued on 28 January 1634-35 Mansell maintained that he had succeeded better with his new company than during fifteen years' employment of Venetians. The fault did not lie with the Venetians, nor was the remedy entirely Mantuan. By this time Admiral Mansell had dwindled into a manufacturer of glass. He was now aware that gaffers must be paid, coaxed, respected, and that a glasshouse is not be conducted by the methods of a quarter-deck. During the remainder of his life there is little to record except the names of some few Venetians who joined the Altarists at Broad Street. The most important of them was Gasparo Brunoro, who signed a seven years' contract with Mansell in 1637. The Venetian Ambassador wrote of him thus in a dispatch dated 26 March 1638:¹ 'There remains one Gasparo Brunovo,² called Tre Corone,³ a Muranese who offers to make crystal glass equal to the Venetians, to make all kinds of vessels and other objects in every colour, large⁴ mirrors and all other crystal work made there. I have tried to persuade him to return to his native land, pointing out the wrong he is doing in wanting to introduce these things; but a year ago he made a contract for seven years with the Knight in question and cannot leave here, where he is enticed by earning 20 ducats a week. I try to deprive his offers of credit. . . . I have succeeded so far that he [Mansell] only employs him for ordinary drinking glasses to his [Brunoro's] great dissatisfaction and does

¹ *S.P.V. Cal.*, 1636-39, No. 418, p. 391.

² Probably an error for Brunoro, the family mentioned in the *Matricola* for 1666 and for 1670 (Zanetti, *Guida*, p. 266), '*per cristalli*'.

³ Implying that he had worked at the famous Three Crowns at Murano (cf. p. 100).

⁴ Large = mural mirrors (*specchi grandi* is the category in the *Matricola*), as distinct from hand mirrors. The latter may be implied in the 'table glass (*verres de table*)' mentioned in Carré's letter of August 1567 (above, p. 94). *Table* = plate.

not believe him about the rest.'¹ Brunoro's wage meant at least £10 a week² and is the highest figure recorded. It shows that Brunoro was a good man and that Mansell's complaints of his 'expenses' were quite justified. Among other Venetians we hear of a member of the famous Berovieri family who was in England about 1650; Filippo and Pietro Perosini, who in 1658 had been in England five years and belonged to a family included in the *Matricola* for 1666; and Paolo Mazzola, no doubt a relative of Francesco Mazzola. Paolo came to London in or about 1640 and seems to have stayed with Mansell about fifteen years. He makes his first appearance at Liège in 1655 and subsequently worked for glasshouses at Maastricht, Paris, and Rouen—a typical gaffer's career. His speciality was *verres ornés*, for which the English was 'extraordinary fashions', 'bespoken fashions' or 'ornamental work'. See p. 134 and p. 178.

The quality of Broad Street *cristallo* is rather difficult to estimate. Contemporary testimonies vary from 'good' to 'bad', and as late as 1636 one of the Venetian Ambassadors speaks of 'Mansfeldt'³ [*sic*] who can only manufacture coarse glass'. The probability is that the metal was good when the men were sweet, bad when there had been a row. On its day Broad Street could do first-class work. Witness the following account written by an Ambassador whose bias was against Mansell and his 'poor Muranese exiles'. It is dated 27 March 1620,⁴ a few months after Antonio Miotti had taken Broad Street in hand: 'Various subjects of your Serenity, some outlaws who have taken refuge in this kingdom, where many natives of Murano may now be

¹ Here, as usually, the Ambassador discredits both the absconding Venetians and Mansell's attainment, for the sake of a quiet life.

² Ducat prob. = the silver ducat = about 4s. 2d. pre-war.

³ In early life Mansell spelled his name Mansfield.

⁴ *S.P.V. Cal.* xvi, 1619–21, No. 301, p. 212.

met, work at making looking glasses or flint glass or teach how to make them. One of them, so I am informed has given instructions how to make curved flint glass, Murano fashion, another how to make it better, so that there are many English who work admirably, and the crystal attains a beauty not sensibly inferior, but of quite equal quality to that of Murano, which used once to have the pre-eminence and was the pride of all the world.' He praises metal as such, 'flint glass' for vessels as well as mirror plate.¹ Certain fragments of stemmed drinking-glasses, excavated in England, particularly the collection at Canterbury, suggest that Mansell's metal was of a transitional type between that of the Verzelini group and the 'rock crystal' of Cam and other manufacturers of the 1660's. Like other Venetian glass made in the north of Europe, it had lost the peculiar softness of a true Murano *cristallo*.

It remains to notice the design of domestic-and-fancy glass under Mansell's régime. The importation of glasses from Venice was prohibited on 25 February 1619/21 and again by Proclamation of 14/24 October 1635. The Venetian Ambassador was constantly urged to negotiate for more favourable trading terms. On several occasions we hear of English visitors at Venice obtaining special permits to send home cases or cupboards of glass free of export duty; thus in 1634 the English Ambassador was permitted to send home ten cases of crystal glass free of export duty for the use of Charles I and the Earl of Arundel.² Such exceptional requests are consistent with the protective policy of the English Government under Elizabeth, James I, and Charles I. Murano glasses were not excluded altogether, but they were restricted. This

¹ See above, p. 117. When imported Ticino flints ran short, Broad Street probably fell back on inferior English flints (cf. p. 123 above).

² *S.P.V. Cal.*, 1632-36, No. 510, p. 419 (14 July 1634).

fact increases the probability of an English origin for numbers of 'Venetian' wine-glass stems, beaker bases, and other fragments which have been excavated in London and in the provinces. Most of them are certainly too coarse to be anything but England make; fragments of wine-glasses predominate, and it is evident from the documents that wine-glasses and beer-glasses were the chief items in Broad Street production. The following are the principal

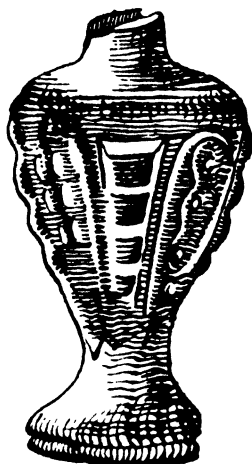


FIG. 4.—*English laddered stem (actual size). About 1600–35. John M. Bacon, Esq.*

types of wine-glass stem which have been found in this country and may be assigned to Broad Street:

(1) Hollow mould-blown stems like those of the Verzelini group (Plate XVI *b*). These are decorated with (*a*) lion-masks, or (*b*) festoons, or (*c*) lion-masks and festoons alternating. They belong mainly to the period 1570–1635. They follow the routine production of Italian factories in the North, but many of them are thicker, coarser, and less finely mould-blown.

(2) Laddered stems (Fig. 4) of the Winifred Geare

type (Plate XVI *a*) came into vogue at the end of the sixteenth century. Winifred (1590) is early in the series. The examples listed on p. 108 are coarser and later.

(3) A third phase takes off from the composite Barbara stem of 1602 (Plate XVI *b*). But, (*a*) the moulding of the lower part disappears, (*b*) the lower part becomes slimmer and taller, (*c*) the upper part becomes shorter, (*d*) the metal is much thicker-blown, though still hollow-blown. One would be inclined to date this development from 1615 to the Restoration. See Fig. 5, typical and not singular instances.

Another type of stem, found in London Wall (Guildhall, No. M.vii, 102), is coarse in quality and consists of two hollow-blown knops sandwiching a rather larger knop. It is of the same form as the stem of an hour-glass¹ used by Sir Hugh Platt (1552-1608)² and illustrated by him. It may be seen in a stem fragment at Canterbury and in a Progress glass, now at Windsor Castle, used by Queen Elizabeth and possibly of London make.

Mansell had three grades of 'wines' which in 1639 he described as follows³: the stem fragments which I have mentioned belong to B or C, but they are not of 'extraordinary fashions':

A. '*Ordinary Drinking-Glasses—For Wine, formerly sold for 4s per dozen, have been and are now constantly sold by me for 2s 6d per dozen.*' These are an inferior article at a low price. 'Ordinary' suggests *vetro commune* of a greenish

¹ In 1637 Ralph Moore, Henry Symonds, Stephen Awdly, Edward Giles, and David Watkins made up hour-glasses from hour-glass vials bought at the doors (*i.e.* from glass pedlars) at 7s. and 7s. 6d. the gross. These were, no doubt, Wealden. Mansell also made them and raised the price to 9s. (*S.P.D. Cal.*, 1637-38, No. 82, p. 23, 15 December 1637).

² *Jewell House of Art and Nature* (1st ed. 1594), London 1653, p. 173 cut.

³ Brit. Mus. MS. 669 f. 4 (7), cited *NQ*, 24 October 1891, and Hartshorne, p. 435. The date is fixed by relation to a dated document of 1639.

tinge. The term wine-glass is not used (see below), but a stemmed form is probably implied.

B. '*Cristall Wine-glasses—Formerly made [at] and imported from Venice, were sold for 18s per dozen, and are now sold by my Merchant for 7s and 8s per dozen.*' This item seems to imply that the cheaper glasses at 7s. and 8s. were then (1639) being made by Mansell to correspond with similar lines which he had formerly imported from Venice (as his monopoly allowed), and had sold at 18s. Cut price as between Murano make (import duties) and English make.

C. '*Cristall Wine-Glasses—Made by me, were formerly sold for 16s per dozen, and are now sold for 5s 6d per dozen, and the dearest [,] being of extraordinary fashions [,] for 7s per dozen.*' Here Mansell refers to his own production costs and the high piecework rates¹ commanded by gaffers like Brunoro and Paolo Mazzola, who could do 'extraordinary fashions'.

Extraordinary fashions are mentioned in the plural and must have included several distinct lines. The following are the types which may be included among them: (1) Wine-glasses with coiled cane-work stems; with figure-of-eight² stems; and with elaborately pincer wing stems.³ I do not know of any evidence that the fully developed *Flügelglas*⁴ was made in England, but in view of Mansell's high-class gaffers and their previous experience the possibility cannot be ruled out altogether.⁵ The

¹ At Liège (Bonhommes) about 1655, gafferson *verres à serpents* got four florins for two dozen glasses.

² Type, *History*, Pl. XXX, and *Antique Collector*, iii, 1932, p. 363, Fig. 3.

³ Type, Schmidt, Fig. 71, and my *Eng. and Irish Glass*, Fig. 5 (this an English piece).

⁴ Type, Schmidt, Fig. 70.

⁵ Cf. a snake-stem glass at Guildhall, F. Buckley, Fig. on p. 51, with the Snake glass in the Glass Sellers' arms (S. Young, p. 2).

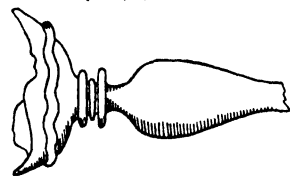


FIG. 5a.—Part of wine-glass with crinkled collar round base of bowl. For stem forms cf. Pl. XVI a and b; for collar cf. Fig. 6. Height now $2\frac{1}{4}$ ". Found at York. English; middle of 17th century. Yorkshire Mus.

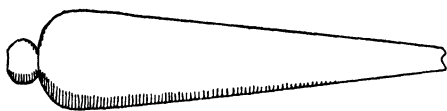


FIG. 5c.—Wine-glass stem. Height $3\frac{1}{4}$ ". First half of 17th century. Canterbury Mus., No. 2561; Leicester Mus., No. 1493-85 (local find, height $3\frac{1}{4}$ ") is similar.

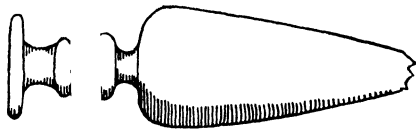


FIG. 5d.—Wine-glass stem. Height $2\frac{3}{4}$ ". First half of 17th century. Canterbury Mus., No. 2551.

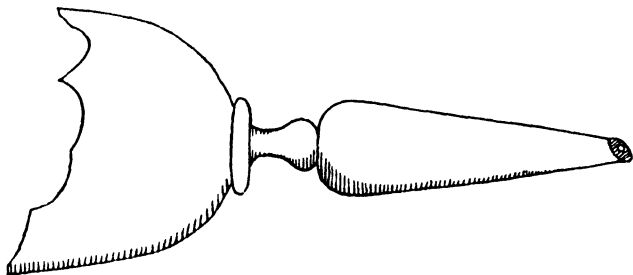


FIG. 5e.—Stem and part of bowl of wine-glass; crystalline glass blown fairly thick; sides of stem very thick. Height now $5\frac{1}{4}$ ". English (Monopoly period); first half of 17th century (see p. 129). Find-spot uncertain. Ipswich (Christ Church Mansion) Mus.

ine-glass stem.
First half of
Canterbury
170.

figure-of-eight stem and the wing-stem are both well known in 'ornamental' and 'extraordinary' work dating from the Ravenscroft period, and they certainly did not spring from nothing. (2) The less elaborate kinds of *lattice* were commonly made in the Netherlands, and there is no reason to think that Broad Street was exceptional. A wine-glass¹ at the Guildhall, No. M.vii, 57 (SG 220), has a hollow ball-knop stem and a V-shaped bowl, the latter decorated with vertical strips of opaque-white glass; compare the beer-glasses noticed below. One or two other *lattice* fragments found in England are too coarse for Murano.² (3) It is likely that Mansell produced some coloured glass. Two of his men at least, Miotti³ and Brunoro,⁴ were specialists in coloured glass and presumably made it while they were in his employ.

Apart from 'Wines', Mansell's best line was beer-glasses ('beare glasses' in the Kenilworth inventory and in several other inventories of the sixteenth and seventeenth centuries). Of the nature of a beer-glass there is no doubt. Sir Hugh Platt (1552-1608) gives instructions thus for one of his curious experiments: 'Take a Beer glasse of six or eight inches in height and being of one equal bigness from the bottome to the top'.⁵ This means a beaker, akin

¹ Similar in shape to a Kirkby Mason glass figured in my *History*, Pl. VIII (3).

² Excavations at Broad Street in 1874 are stated to have revealed 'filigree fragments' (*Bulletin*, xxix, 1890, p. 130).

³ See his application at Brussels (1623): '*muni des qualités . . . pour faire . . . les verres, vases coupes et tasses de fin cristal de Venise de toutes sortes de couleurs à boire vins et bières*', quoted by Houdoy, *Verreries à la façon de Venise*, Paris 1873, p. 54. Cf. Mansell's 'wine-glasses and beer-glasses'.

⁴ See above, p. 125.

⁵ *Jewell House of Art and Nature* (1st ed. 1594), London 1653, No. 97, p. 76. The shape accords closely with a glass tankard in the British Museum, with foot, handle, and lid of unmarked silver, the lid enamelled with the bearings of William Cecil, Lord Burghley. H. with mounts 8½ in. There is no evidence that the glass is England-made, but no reason why it should not be.

to the *Spechter*, and more strictly cylindrical in form than some of the numerous beakers which have left their bases on Lorrainer sites in England (cf. Plate XV *a*). Mansell made and sold three grades of beer-glass, corresponding with the three grades of wine-glass already quoted:

A. '*Ordinary Drinking-Glasses—For Beer, sold formerly for 7s 4d and never under 6s per dozen are now, and have been for 15 years past sold by me, for 4s per dozen.*' These were too common to be designated beer-glasses. They were more expensive than the equivalent grade in wines, but they were larger.

B. '*Cristall Beer-Glasses—Formerly brought from Venice have anciently been sold for 20 and 24s per dozen without covers, and are now sold by my Merchant for 10s per dozen, and 11s of extraordinary fashions.*' See note on cristall wine-glasses, above.

C. '*Cristall Beer-Glasses—Made by me (which never were before in this Kingdome) and of all fashions that are desired and bespoken were heretofore sold for 18s the dozen and are now sold for 9s the dearest.*' 'Never before' = never made in *cristallo* before Mansell's patent (1615).

Of these 'extraordinary fashions' one type is certainly represented by bases of cylindrical beakers of clear glass with vertical stripes of opaque-white cane. In these *laticino* beakers the cylinder is joined to the pedestal foot by *soudure à griffes*, a common feature of North European *façon* work: e.g. (1) Cuming Museum (Southwark), No. C.1821, London find, blackish *cristallo* metal, base diam. $3\frac{3}{4}$ in.; (2) Guildhall Museum, No. 1930-133, London find, surviving height $3\frac{3}{4}$ in.; (3) *ibid.* No. M.vii, 89. In all three examples the work is extremely coarse. Analogous with them is a beaker base at Chester, found in Dogstall Lane and decorated with spiral stripes of blue-coloured glass alternating with opaque-white. The pattern was a

favourite one in the Netherlands and well within the capacity of Broad Street.

Mansell's beer-glasses made a reputation on the Continent. About 1655 the Liège price-list speaks of *verres à l'anglaise à la bière à deux règles*, one of a number of descriptions which refer to work and shape and not to metal. The meaning of *règles* is uncertain, but I think it may refer to beer-glasses twice graded by trailed and tooled cordons, in the manner of the German *Passglas*. The lower part of such a glass, of cylindrical form and yellowish-green metal, is in the Guildhall Museum (No. M.vii, 52). The best example is an unbroken beaker in the London Museum (A. 3950) with two rigaree trails encircling a short cylindrical shape.

'Extraordinary' and 'bespoken' or desired 'fashions' probably indicate also that Broad Street was prepared to design sets of fantastic table glass to suit decorative cooking and the lay-out of special banquets. The question is sometimes asked: where *are* these Mansell glasses other than excavated fragments? I suspect that they are concealed in collections of North European glasses which are '*façon de Venise*,' but not real Murano. England and the Netherlands shared one industry.

THE RISE OF ENGLISH CRYSTAL

THE Civil War (1642-49) and the Commonwealth (1649-60) queered the market for nearly twenty years. Many people regarded fine crystal as a relic of royalty and a sinful extravagance for Roundheads. Many more confused wine-glasses with drunkenness, mirrors (even Mansell's) with vanity, stained-glass windows with Popery. Such an attitude in the purchasing public made the salesman's life a hard one and extinguished the Charter of Incorporation which the London Glass Sellers had received from Charles I (2 September 1635)¹ for the distribution of Mansell's wares. But depression in the shops is not to be mistaken for the disappearance of any branch of the industry. Cromwell himself found it sufficiently prosperous to yield him a tax worth collecting, a republican equivalent for the rents paid by the monopolists to the Crown, and as soon as the war ended there was enough work to attract several new Italians to London. Three² of them have already been mentioned. By 1649 Mansell was an old man, and I am inclined to think that after the war his monopoly lapsed and that the industry was worked

¹ Under the Charter of 2 September 1635 (Bye-Laws, 27 April 1636) the Master was William Kirby, the Wardens Thomas Robinson and Thomas Brown, the Assistants Thomas Cliffe, Thomas Payt, John Steward the Younger, Robert Westbrooke, Willm. Lucas, William Kirby, Daniel City, Richardson Backson, William Cowper, John Robinson, and Anthony Slade; Clerk, Richard Baltiff. Provision was made for saving the rights and privileges of Sir Robert Mansell.

² See above, p. 126.

by smaller independent masters, some of them Italians from Italy or the Low Countries, others already English.

The four years from Mansell's death to the Restoration mark a kind of zero between a devolving process and an evolving process. During the half-century following Verzelini's withdrawal the Italian industry in London, and indeed in the North of Europe generally, had gradually been forgetting how to make Murano metal and how to work in it. London spent the period 1660-75 in learning a substitute within her powers, and in fitting it for the needs of her market. This crystal movement was by no means peculiar to London, but part of a general transformation in the aesthetics and the marketing of glassware which affected every country in the North of Europe. In Germany and Bohemia lime-soda glass was 'forced' by the development of glyptic decoration at Prague and Nuremberg, but in the Netherlands, in France, and in England, crystal, in the sense in which we must now use the term, was as much a *style* in glassmaking as a chemical variety of metal. It was elicited by the decline of *gaillardise* and by the conversion of glass from a luxury into a commodity. It implied a thicker, stronger, more durable ware. And in this sense lead glass, different though it was from the lime-soda glass of the Continent, was related to it as species to genus and not as genus to genus. This fact has been succinctly expressed in the French distinction between *le verre* and *le cristal*; lime-soda glasses and potash-lead glasses may both be *le cristal*. In London a style appropriate to potash-lead glass *preceded* the manufacture of potash-lead glass itself—so much we know from Greene's designs and from existing fragments of the period 1660-1675. And a new metal, superseded by Ravenscroft, was known commercially as 'rock crystal'. First made by Cam in 1660 and still made by Ravenscroft in 1673, it was

London's failure to make a satisfactory lime-soda glass. Lead crystal was evolved by Ravenscroft in the course of an attempt to correct its faults, faults which had caused much concern to the Glass Sellers since 1660. It was for this reason that the Glass Sellers nursed Ravenscroft in a research department at Henley and made such a fuss of him when he succeeded.

There has been a tendency to over-estimate the importance in the industry of George Villiers, second Duke of Buckingham (1627-88), partly because his glassmaking was noticed by Evelyn, Houghton, and other contemporary writers. As an industrial figure he was a relic of the monopoly system which had flourished under unlimited monarchy and died with it. He lacked Mansell's force of character and he had too many political interests to pay sufficient attention to any of the three branches of glass-making in which he invested money. But in virtue of his position he made an excellent dummy director for the Restoration industry and brought with him the custom and support of the upper classes. The new independent manufacturers used his name for what it was worth and showed considerable skill in wangling patents which were nominally granted to a Duke and a Privy Councillor. The Duke's waywardness was of the utmost value, since it forced the retailers and the manufacturers to settle questions of production and design according to the main trend of the market and their own interest. Whence proceeded London crystal.

Charles II landed at Dover on 26 May 1660 and at 7 P.M. on the 29th he was welcomed in London by both Houses. Within three months of this happy event the first of the new manufacturers took his opportunity and secured the use of the Duke's name. He was a French 'arcanist' called John de la Cam, one of the Counsellors and Master

Doctors Ordinary to the King of France. He was not a gaffer. He persuaded the chemical Duke to put up a capital sum of £6000 and on 18 August the parties signed interchangeable *Articles of Agreement*¹ in anticipation of a patent,² for which the Duke undertook to apply. In return for exclusive instruction in glassmaking the Duke agreed to make over 'All that House Garden yard with the appurttnns thereunto belonging commonly called Rutland house in the Charterhouse yard where the workehouse³ is intended to bee built and erected for the exercising of the said Mistery of Melting Cristall de roach for and during the continuance of the Terme of tenne yeares'. The Duke was to be responsible for all overheads⁴ and wages not exceeding the sum of £6000 including those of 'officers for workmanship',⁵ probably Venetians procured by Cam from France or the Netherlands and identical with the Venetians whom the Duke is known to have employed later at Greenwich. It was also covenanted that prices should be agreed before any sale of goods, books kept, secrecy maintained, and profits shared fifty-fifty. But the Duke permitted himself the right to appoint a person or persons for the 'Oversight of the said worke'. This was always the Duke's trouble. The document smacks of an amateur's laboratory and not of British trade. As for Cam, he did not stay his ten years, but went to Nimwegen. Here in June 1668 he obtained possession of a disused Roman Catholic church known as the Augustynenhuis, which he managed as a glasshouse for '*christalyne*

¹ The copy signed *la Cam*, vellum, 23 in. by 21 in., period edged at top, was found in 1932 by Mrs. Katherine Esdaile in the hands of a Leicester bookseller, and was acquired by the British Museum, Ceramics xv a (8-8-32). It is of legal length and I can only give a summary. ² Cf. *History*, 1929, pp. 101-2.

³ Not a glass-trade term of the period in question ('glasshouse').

⁴ Stated at length.

⁵ Not a glass-trade term of the period; 'Master Workman', 'Artist Glass-maker', 'Gentleman Workman' are usual; 'gaffer' is 18th cent.

glas, en' on behalf of a strong local company including the Burgomaster Pontiaan Singendonck, a local professor of philosophy Theodorus Cranen, Henrick Heuck, and a legal official called Engelbert Beeckman. There were quarrels of Cam with the shareholders and of the shareholders with one another, but the glasshouse continued working until late in 1670.¹ I can find no trace of Cam before 1660 or after the closing of the Augustynenhuis. In his agreement with Buckingham, Cam described his metal in the words 'Christall de roache or Venice Christall'. This is one of the last occasions on which a glassmaker in England thought it necessary to use the stock reference to Venice; and it is the first instance in English sources of a comparison of the metal of glass with 'rock crystal', rather than the vaguer 'crystal' (*cristallo*) of Mansell's price-list. Metal was getting thicker.

The collections at the London Museum, at the Guildhall, and in one or two provincial museums, contain a few fragmentary glasses which approximate Cam's metal; but a better idea of 'cristall de roache' may be obtained from a few intact pieces dating from the early 1670's, and made of a thick white metal scarcely to be described as lead crystal. One of these is a covered sweetmeat in the Bles Collection, *ex* South Kensington (No. 179),² which still retains the fluted-bulb stem and mereses of mid-century design. A pair of NDW jugs, formerly in the Kirkby Mason Collection, may also be cited.³ They probably represent Ravenscroft's initial metal (1673-75), for which Ravenscroft used the same simile as Cam.

I need only notice here two other patents for domestic-and-fancy glass. On 10 November 1661 Martin Clifford and Thomas Powlden obtained a licence for their 'new

¹ Hudig, pp. 71-2.

² *Rare English Glasses*, 1925, Pl. 73.

³ Thorpe, *History*, 1929, Pl. IX and pp. 124-6.

invention of making christall glasses'. A year later, October 1662, this licence was converted into a patent, granted for a term of fourteen years to the Duke of Buckingham in the name of his agents or servants, who were Clifford and Powlden. The patent was surrendered on 4 August 1663. The second licence was obtained by Thomas Tilson on 19 October 1662 and differed from that of Clifford and Powlden in covering mirror plate as well as domestic-and-fancy ('christall glasses'). This also was converted into a patent (4 September 1663) for fourteen years, granted to the Duke in the name of his agents or servants, and that part which related to mirror plate was absorbed in the Duke's sole privilege for mirror plate of 20 July 1663. Buckingham's glasshouse for mirror plate was at Vauxhall, and was managed from 1671 to 1674 by an Englishman, John Bellingham, who seems to have gained his experience in the Netherlands and perhaps also in France. From 28 March 1666 he was in charge of a glasshouse newly founded at Haarlem by an Amsterdam merchant, Dirck van Cattenburgh, for the manufacture of 'drinking-glasses and French mirror plate', and at Haarlem he was associated with three other English glass-makers, John White, John Lodge, and Benjamin Furby. This job ended, Bellingham in 1669 joined forces with Abraham Pieman and took over a mirror glasshouse on the left bank of the Amstel at Amsterdam, founded in 1667 by one of the great Hennezel family, '*Jean de Hennesel Sr. de Godancourt gentilhomme ord^e de son altesse royale Madame Duchess douarière d'Orleans*'. From Amsterdam Bellingham came to England in or about 1670.¹

Three well-known Anglo-Netherlands glasses belong

¹ See Hudig, *op. cit.* pp. 55 and 74, based on documents (E. van Biema in *Oud-Holland*, xxiv, 1906, p. 242, etc.). For Bellingham see *History*, p. 103 and p. 141 n.2, and W. H. Bowles' privately printed monograph, *History of the Vauxhall and Ratcliff Glasshouses*, 1926.

to the early years of the Restoration. The most famous is the Royal Oak goblet in the collection of Mr. Joseph Bles, *ex* the Victoria and Albert Museum.¹ This is of clear brownish thin-blown glass and has a cylindrical bowl on a hollow fluted-bulb stem with a merese below the bulb. The foot is spun thin and unfolded. The bowl is engraved in line with a diamond: *obv.* portrait bust of Charles II, enclosed in a medallion among the branches of an oak tree (the Boscobel Oak) over a ribbon bearing the legend ROYAL OAK, flanked on the left by a portrait of a young woman (Catherine of Braganza) with the letters REG[INA], on the right by a crowned bust of Charles II with the letters C and R on either side; *rev.*, the Royal Arms of England, as borne by Charles II, over the motto *DIEU ET MON DROIT* in a ribbon supported by the lion and the unicorn, the former crowned, and surmounted by a crown flanked by the paired figures of the date 1663. The glass was engraved, and probably made, on the occasion of the marriage between Charles II and Catherine (1638–1705), daughter of John, Duke of Braganza and (1640) King of Portugal, celebrated in London on 21 May 1663. In form the glass belongs to a familiar Netherlands type of the seventeenth century.² The engraving has a strong affinity with the work of a school of amateur and professional diamond-engravers which had flourished in Holland for some thirty years previously. The only question arising is whether the Netherlands glassmanship and the Netherlands engraving were done in London. As regards the glass itself, London manufacture is supported by the relationships of the King

¹ Illustrated by Hartshorne, Pl. 29; Bles, Pls. 1–2; Thorpe, *History*, Pl. VII (2). Formerly in the Grenville family of Stow, Morwenstow (Cornwall); Rev. R. H. Hawker of Morwenstow; the latter's niece; J. Singer; Henry Festing; Joseph Bles. Hartshorne gives no authority for his suggestion that it was 'perhaps presented by the King to Buckingham'. See also *Times*, 3. iv. 1935.

² Cf. Wilfred Buckley Collection, No. 56, a close parallel to the Royal Oak.

with the Duke and of the Duke with the industry, by the interpenetration of London and Netherlands glassmaking, by the existence in London of three glasshouses¹ all working in May 1663, and by the nature of the inscription. On the other hand the metal is too thin and too Venetian to fit the description of his metal given by Cam, and so far we have no positive evidence of a Netherlands diamond-engraver—a later de Lysle—working in London soon after the Restoration.

The other two glasses are also of Netherlands type. A flute in the Royal Albert Memorial Museum at Exeter² is diamond-engraved with the legend *God Bless King Charles the Second*, a portrait bust of Charles II in an oval medalion, and a tree-stump set in the earth and supporting a young branch of oak leaves. The last-named motive was adopted as his device about 1584 by Prince Maurice of Nassau in response to the assassination of his father, and was used also by William II of Orange (1626–50). As such it appears on a flute in the Wilfred Buckley Collection³ engraved with a portrait of William II and the legend *Vive le Prince d'Orange*. Strong resemblances of style and lettering suggest that the Exeter glass was engraved by the same hand, but it must have been in or after 1660; the stump and branch have either become a decorative motive, or they are reapplied, as the Royal Oak glass suggests, to Charles II's association with that tree. In any case it is clear that the engraver executed an English order in the early 'sixties, and that is a strong reason for assigning a similar date to a third flute with English associations. This glass,⁴ in the collection of the late Sir Richard Garton

¹ Cam, Clifford and Powlden, Tilson.

² Thorpe, *History*, Pl. VI.

³ W. Buckley, *Europ. Glass*, Pl. 57A.

⁴ Illustrated *The Antique Collector*, iii, 1932, p. 362, and Bles, Pl. 14. Formerly the property of the Earl of Chesterfield. Now in the London Museum.

of Haslemere, is engraved with the Royal Arms of England connected by stippled festoons of fruit and flowers with the arms (gules, 3 stirrups leathered and buckled on) of Scudamore of Kentchurch and Holme Lacy (Herefordshire), a family then represented by John, first Viscount Scudamore (1601-71) and a great Royalist; below is a line of trees and stems, which are purely decorative, and a threefold repetition of the initial S. The stippled festoons are in treatment a survival from the style of the sisters Roemers Visscher in the 1640's; but if the Exeter flute, closely resembling the William II flute, is nevertheless ten to fifteen years later in date, then the Scudamore flute may date with equal probability from the early 'sixties. And the Royal Arms of the Scudamore glass, the parallel cases of the Exeter and Royal Oak glasses, and the circumstances of the Restoration, all suggest that the glass was engraved for the Scudamores, not during the Civil War and Commonwealth period, but in the 'tumult of demonstrative loyalty' which greeted Charles II. Nine 'King glasses' are mentioned on 16 July 1665 in household accounts belonging to Sir Richard Wynne, member of a well-known Royalist family.¹ Where the engraver or engravers worked is another matter, but the anachronistic style of the Exeter and Scudamore flutes gives colour to the view that an engraver may have worked, under time-lag, in London. Greene's friend, the Dutch glass-seller Van Mildert, is a possible author or agent for such glasses.

From these relics of Royalism we may turn to potash-lead crystal and the first glass industry which was entirely English. The agent of this achievement was George Ravenscroft, who made the new metal a marketable commodity, but its real authors were the English scientist and the English shopkeeper. The 'sceptical' or experimental

¹ See *History*, 1929, p. 311.

movement had existed for some time among a few people, but it did not begin to be effective industrially until the year of its incorporation as the Royal Society (1662). This body described its purpose as the 'extension of natural knowledge'. Newtonian space has ancestors on the Continent, but on it's mother's side it was a hint to country gentlemen; and in less general investigations the Society of Newton aimed at the alleviation of daily life and the improvement of English trade. 'Experiment' was the word of the moment. Glassmaking was one of the first trades to benefit by this mood of critical investigation. There is little evidence for a positive liaison between the Royal Society and the glass trade, but all the personalities who surround the birth of lead crystal—Christopher Merret, Robert Boyle, Robert Plot, Dr. Ludwell, Houghton, and probably Ravenscroft himself, belonged to the experimental movement. Dr. Merret (1614-95), physician of London, set the example by translating (1662) Neri's *L'arte vetraria* (1612)¹ and so providing English glass-makers with the first text-book in their own language. In this he beat the Dutch publisher by seven years, and the career of Bellingham is witness that the Englishmen kept their lead. Further evidence of science in industry is provided by Ravenscroft's personality and the circumstances of his work—the special research station provided for him at Henley-on-Thames, the isolated situation, the repeated experiments with crystalline glass, Plot's visit in 1675, and the analytical interest of Dr. Ludwell of Wadham College, a recent Oxford foundation and a stronghold of the modern movement. In view of these facts we must regard lead crystal, not as a gradual development beginning about 1660, but as an invention in the stricter sense of the word. It was the result of an attempt,

¹ There are interesting mistakes of translation in Merret's Neri.

conceived deliberately and carried out experimentally, to provide a sound commercial substitute for 'rock crystal'. And in the whole history of glass it was a new thing.¹

The final credit for the work of 1673-76 rests with the English shopkeeper. The London Glass Sellers belonged to a different age from their rival the Duke. Though they had raised their heads under Mansell's rule, in spirit they were the contemporaries of the Royal Society. Their Charter of Incorporation was granted by Letters Patent under the Great Seal of Charles II, dated 25 July 1664, and was enrolled in the Chamber of London on 28 September of the same year; bye-laws drafted that summer were authorised by the Lord Chancellor and the Lords Chief Justices on 28 November 1664. By this late recognition they were free from the traditions of older and stickier Livery Companies in the City of London. With the war and the Republic behind them they had nothing to rest on, everything to win, and they caught the spirit of the modern movement as only a new foundation can.

For more than half a century from the date of their Charter the Company held the place of vantage which is open to every retailer. They stood between their manufacturers and their market, and they controlled both. They used this position with a grasp of facts and a sense of opportunities. Their first demand from their manufacturers, both Venetian and English, was for a quality glass, 'verrij Bright cleer and whit sound Mettall'. So ran one of their requisitions to a Venetian manufacturer,² and such was the demand which created lead crystal. When independent glassmakers failed to satisfy it they decided

¹ There seems to be no evidence that lead crystal was made at Alexandria. For lead in coloured pastes cf. p. 67.

² Sloane 857, correspondence of John Greene with Allesio Morelli, 10 February 1670-71, before lead.

to have their metal made to order, and in the area where their control was effective they maintained an exacting standard which still distinguishes early London crystal from 'Cuntry glasses'¹ made outside their supervision. Having got their metal, they designed for it. They also designed for their process, the gaffer. In the 1660's they dared not risk a Murano variant on a proven best-selling model, and in consequence their specifications were absolutely rigid in 'fashion and size'.² When lead crystal appeared they abandoned their exact patterns for standard models capable of variation at the chair; fashion and size at Henley were arranged by informal discussion³ between Ravenscroft and their clerk and sales expert, Samuel Moore. This latitude enabled them to make appeal value out of the gaffer's caprice. In commercial men who lacked the feel of the tools it showed great understanding, and it settled for fifty years the trend of development in baluster glasses and their knopped derivatives. It produced the endless variations of stem form, a perfect combination of design-before-making and design-in-making and the great distinction of English glass.

The Company handled its market with equal intelligence. They made no attempt to hurry the public out of a Venetian conception of glass, but provided two distinct styles to suit conservative and modern purchasers. The only suggestion of propaganda is in these staid words of the Request for a Prohibition (December 1670): 'Con-

¹ *Ibid.* The reference at this date is to early attempts of provincial glasshouses to flood the London market with their early efforts in lead crystal.

² ' . . . and noe other fashions or sorts be sent but those correspondent to mij patterns heere Inclosed' (John Greene to Allesio Morelli, 10 February 1670/71). Elsewhere in the letters Greene shows this fussy accuracy of a man who knows just what he can sell.

³ This is evident in the Company's letter to Ravenscroft of 13 October 1674 (Sloane 857): 'Mr. Moore better knows what is fitter to be made for the Trade both as to ffashion and Size'. Fashion = design rather than *la mode*.

cerning prohibiting Venice Drinken glasses everij owne that in them knows the great difference there is betweene venice glasses and the best made in England yet if the Parliam^t. and ye gentrij of the nation can be satisfied with English glasses, Then none of ye shopp keepers will oppose it. . . .’ The gentry remain; the old word ‘nobility’ does not occur in the Glass Sellers’ papers. Both before and after the Company assumed the rôle of manufacturer they designed their glasses by a strict attention to the evidence of previous sales. It was because they stuck to this axiom of retail that they were able to interpret the taste of their time and to give glass its first English characteristic. They knew that the content of commercial art is the common sentiment of the nation and must be left on the knees of the customer. For themselves they reserved the formal authority of designers.

The methods of the Glass Sellers are well illustrated in the business correspondence between the partners, Michael Measey¹ and John Greene,² Glass Sellers, of the King’s Arms, Poultry, with their manufacturer, Allesio Morelli of Murano, a well-known firm. These letters, now in the British Museum, begin in 1667 and end in 1673, about two years after the Company’s decision to have their own glass made in London. They end in that year because Measey and Greene subsequently obtained their supplies from the Company’s own manufacturer. They are the only extant correspondence of the kind, but they indicate without question the general practice of London Glass Sellers in the 1660’s; Measey and Greene mention three other London retailers engaged in the same line of business:

¹ Assistant at the foundation.

² Assistant at the foundation, Renter Warden 1671 and 1672, Upper Warden 1673, Master 1679, died 1703. The Company’s Poor Box, a lovely piece of work, bears the legend: THE GIFT OF MR. JOHN/GREEN SENIR A MEMB/ER OF THIS COMPANY/MARCH R 25 1690.

Richard Sadler, Assistant in 1664 and Master in 1674; John Allen, Renter Warden 1681-82 and Master 1687-1688; and a Dutch retailer by name Van Mildert,¹ resident in London but not a member of the Company. There are minute directions for packing, and polite complaints of breakage losses. No method of insurance was in use, but losses were on the transmitter. The specifications are accompanied by a series of drawings, famous as 'Greene's designs', but more properly the Company's. They fall into two types: hyaloplastic pieces analogous with the baroque crystal described below; and undecorated wines and beers which were best-sellers on the London market and had issue in the earliest lead-crystal balusters. Measey and Greene ordered and sold the following lines, but the list applies generally to members of the Company, and excepting the items of opaque-white and *calcedonio* (marbled glass or *Schmelzglas*) it may be taken as a production list for the earliest lead crystal as well as for specified Venetian wares:

Sack glasses.

Clarett glasses.

Beere glasses.

rñish [Rhenish] *wine glasses.* The *Römer*, then a commonplace in Northern Europe for Rhine wine and other light wines; for the Company's own model see Plate XVI *c, d*.

beakers.

brandij tumblers. A short cylindrical shape; see *History*, Fig. 16M, and Pl. XXV (1). Good example at Guildhall.

long cruits.

flower pott glasses. Stands for flower vases.

toijs.

2 dozen 6 glasses in a neast very well fitting. Sloane 857,

¹ Prob. Daniel van Mildert of Amsterdam, naturalized 13 May 1664.

f. 17 rev., Nos. 27-28. A nest of short cylindrical glasses.

Thick beere.

Thick Clarett. Demand for stronger metal than the usual thin-blown Murano; cf. p. 145 above.

flintt Sack. Probably a clerical error for *fluit sack*, i.e. the flute, of which an unexplained drawing was attached; *History*, Fig. 16(o). Murano did not use flints. But if the reading is retained Greene may have had a 'thick' metal in mind.

Creuits wth feet (Not certainly identified but for the latter type, cf. *History*, Pl. XVII (1).
Creuits wth out feet

Floureppotts of 2 sortt.

fine ebonj and Ivorj small hour glasses. Hour-glasses with two-colour mounts, ebony framing the past, ivory the future (or *vice versa*, if you pleased (?)). Very high class. A small order.

plaine round bottom glasses. Get these made first, says Greene (10 February 1670/71). He referred to his best-selling model, the stemmed claret-glass with round-funnel bowl, which became the basis of bowl form throughout the baluster period. Cf. *History*, Fig. 16(G-J), Pls. XLIV (2), L (1-2), etc.

Speckled enameld covered beere glass. Beer-glasses, probably of beaker form, made of opaque-white metal speckled with blue and other colours. A well-known Murano fabric.

french wine. Several different shapes are so labelled.¹ Compare *Cal. Treasury Books*, III (2), p. 1150,

¹ Sloane 857 contains more than 400 designs, actual size. Hartshorne only reproduced some three dozen, without stating the sizes (which vary for different drinks) and without quoting the valuable descriptions and quantities which are written across them quite legibly. It is quite time they were properly published.

French commodities imported for the Duke of Monmouth, 4 December 1671: '3 dozen of French glasses, 4 covered glasses, 2 of the same sort without covers, 8 pair of glass candlesticks of several bignesses, 20 little glasses for a cupboard'. *cruits for oijle and Vinegar*. The familiar two-in-one model with necks curving in opposite senses. One such is drawn in Sloane 857.

false pearl neck laces. No comment.

ribt (ribbed) *beer*. One model so described was of shape as *History*, Pl. VIII (3), with light vertical ribs running from brim to base of knop. So drawn and labelled; Sloane 857.

Ribt wine glasses = straight-funnel bowl; *History*, Fig. 16. *clouded calcedonia coverd clarett glass with feet and ears of good hansom fashions*. The metal here is a streaky polychrome *calcedonio*, or murrine. For 'feet and ears of good hansom fashions', ordered for several different models, compare Plate XVII *a* and *History*, Fig. 16(N), and Plate XVIII. For the importance of these words see below, p. 174.

The actual-size drawings which accompany the various orders are numbered and labelled; quantities are given for each model. Measey and Greene had sack, claret, and beer models, but they frequently ordered the same model both 'for beer' and in a smaller *size* 'for wine'. Such models include several drinking-glasses with straight-funnel and round-funnel bowls, and discredit the collector's practice of relating particular *shapes*, even balusters, to particular kinds of drink.

Greene is sometimes mentioned as if he were the only Glass Seller in London. On 24 June 1675, the year of Ravenscroft's triumph, the Company had a membership

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of eighty-eight, of whom one-half were engaged in the domestic-and-fancy trade.¹ The list includes no less than twenty Grinders for mirror plate.² I have not room here to set down in honour these eighty-eight persons, but must choose those who played the greatest part. In the following list an asterisk marks the members who signed the Company's letter to Ravenscroft of 13 October 1674, a dagger those who signed the permit of 18 September 1675. These were the group responsible for the enterprise of lead crystal.

William Carter, first Master 1664-67.

†John Steward, Upper Warden 1664-67.

*†Humphrey Kilby, Master 1670-71.

*†John Kempster, Master 1668-69.

Hugh Boulter, Master 1672-73.

Richard Sadler, Master 1674-75.

*†John Greene, Master 1679.

John Hudgebout, Master 1676-77.

William Bennett, Master 1680.

John Burroughs, Master 1681-82.

*Anthony Hartley, Upper Warden 1679.

*†Francis Gerard, Renter Warden 1679.

*Thomas Lewin, Master 1685.

†John Allen, Master 1687-88.

*Edward Osgood, Master 1683-84.

†Christopher Seward.

†Thomas Apthorp, Master 1697-98.

†James Maidwell, Master 1695-96.

Nathaniel Adams, Master 1693-94.

*Benjamin Claridge.

¹ *The Indenture of Agreement*, dated 5 September 1674, between Ravenscroft and the Company for a proprietary supply of glasses, is signed by John Steward and 44 other members.

² The authors of the *Request for a Prohibition* of December 1670, Sloane 857, ff. 44-5.

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James Sybley, Master 1692.

John Frith, Master 1699-1700.

*George Phillips.

†*John Stracey, Master 1678.

Clerks

Thomas Knightley, Gentleman, 1664.

John Lambe, 1664.

Thomas Hobson, 1665.

William Ritherden, Beadle, Acting Clerk 1668.

Richard Benning, 1669.

Phillip Probyn, 1671.

Richard Banner, 1672 and later.

Samuel Moore, 1673-74.

These men created the best glass in Europe and the best design in glass since the 'diaphanous pellucid dainty things' of sixteenth-century Murano. They may be said to have defined the nature and function of retail in a sense applicable to other industrial arts and to other circumstances than theirs. They were artists because they were great shopkeepers.

The metal of lead crystal was invented in the following circumstances. The Prohibition of imported mirrors granted in the Duke's favour on 25 July 1664 was withdrawn in August 1668, because the Duke's mirrors were not enough, or not good enough, to support the retail trade in London. Thereafter Company opinion split into two groups. The free-trade party, including Greene, Allen, Sadler, and others, did most of their business in Venetian specified glass and therefore welcomed the repeal. They only desired prohibition if and when they were sure that English manufacturers would afford them as much business as they had previously done in Venetian. The other party, a small progressive minority, saw the

difficulty of co-ordination between retail in London and manufacture hundreds of miles away. If the glass could be made good enough in London, they anticipated lower retail prices and a greater volume of business. They decided that the glass must be so made, and that in any case they would take the risk. At a meeting of the Court on 15 November 1670 the Prohibitionists forced a snap decision and appointed a committee of five to explore the avenues: 'to treat with all the white Glassmakers about London and to agree upon what terms and prices they will furnish this Company and upon what terms and prices they will furnish other customers, in order to obtaining a Prohibition . . . for all sorts of foreign drinking glasses'.¹ The committee of five reported in very fast time on 24 November 1670, and so far favourably that Prohibition was adopted as the official policy of the Company. We have no record of the committee's findings in regard to the preferential treatment which the Company sought at the hands of the white manufacturers. Probably the latter declined the suggestion, and there is not, I think, much doubt that it was in consequence of this report that the Company decided to be its own manufacturer. Within a few months of the November report there are two hints that a Company glasshouse was under discussion. The first is in the words already quoted (p. 149 *sq.*) from the *Request for a Prohibition* of December 1670, words which

¹ There was a similar controversy in regard to the pottery branch of the Company's trade. On 15 December 1676 the manufacturers obtained by Proclamation a prohibition of foreign 'painted Earthenwares' (enamelled or delft pottery). On 12 February 1685/86 they got an Order of Council to enforce it. Whereupon the safety-first party appointed three leading importers (Humphrey Kilby, John Greene, and Nathaniel Adams) to petition for a repeal of the Prohibition. John Greene persistently refused to gamble on Ravenscroft glass, on Dwight's 'Cullen' stoneware, and on London delft, until he was sure of an equal turnover on home-made goods. A shrewd man, not given to enthusiasm, and a useful brake on the forward party. (Court Minutes, 18 March 1686.)

show that the defeated party were beginning to come round. The second is on 3 May 1671, when Greene wrote to his friend Morelli and archly threatened him with the Company's expectations: 'Sir I praij you once againe to take such care that I may have good [glass] and be used verj kindlj in the prices, else it *will* not be to my Interest to send to Venice for neither drinking glasses nor Lookeing glasses, for we make now verij Good Drinking Glasses in England and better Lookeing Glasses than any that comes from Venice . . .'¹

No further action was taken, but it is clear that from the end of 1670 the Company were on the look-out for a proprietary manufacturer who would accept their terms as well as fulfil their standard. At this point George Ravenscroft (1618–81) makes his entry. He was a gentleman of good family and education and a prosperous London ship-owner² who had been engaged in the Venice and Turkey trade. He has several points of resemblance with the potter John Dwight, his colleague in the Company's service.³ He was a man of chemical interests⁴ and no doubt

¹ Sloane 857, f. 20 (my italics).

² He is mentioned *Cal. Treasury Books*, iii (2), p. 1128, 3 November 1671, as part owner and freighter of the *Hopewell*, an old Venetian ship lately 'reedified' by H.M. Consul at Venice.

³ The *Indenture of Agreement* of 25 March 1676 between Windsor Sandys and John Dwight of the one part, and John Steward, Humphrey Kilby, John Kempster, Benjamin Claridge, John Greene, and Francis Gerard (on behalf of themselves and the Company) of the other part, is of similar content, *mutatis mutandis*, to Ravenscroft's agreement of 5 September 1674. The Company controlled design in the London pottery trade well into the 18th cent. Sandys and Dwight were contracted to observe the Company's requisition in 'standards or patterns' as well as in 'metal stuff size and workmanship', and had to keep a Freeman of the Company as inspector at their London warehouse 'to see that the same is properly done' (Company's MSS.).

⁴ A parallel case of an amateur glassmaker is that of John Whitfield (d. 1691), Barrister of the Middle Temple and Gentleman of Canterbury, who built a furnace and made some glasses in the Parish of St. Margaret's, Canterbury (E. Hasted, *Hist. of Kent*, iv, 1799, p. 427).

directed them towards glass in consequence of business contacts with Murano in the earlier part of his career. His venture in glassmaking was at first independent, but the Company had their eye on him and snapped him up as soon as he showed promise. Early in 1673 he built a glasshouse in the Savoy and in July he began work. After eight months of investigation he applied (March 1673/74) for a patent for 'a particular sort of Christalline glass', similar to Cam's and 'resembling rock crystal'. The Attorney-General minuted the application with the praises of a man who does not understand, repeating the applicant's claims of 'considerable public advantage' and 'other ingredients than any other glasshouses in England have used.' A contemporary analysis by Dr. Ludwell of Wadham College shows that at this stage Ravenscroft was not using lead and that 'ingredients' does not refer to it.¹ While the papers were still awaiting necessary action Ravenscroft and the Company fell into one another's arms, and on 27 April 1674 signed their first *Indenture of Agreement*² in anticipation³ of the patent; for three years Ravenscroft was to supply glasses to the Company, but not all his output or to the Company alone. He was on trial. The patent went through on 16 May 1674, and later in the summer the Company, having tasted his quality, gave him more generous terms. By the Second Agreement, dated 5 September 1674, Ravenscroft was to send the Company the whole of his output and he was permitted to build a second glasshouse, this one at Henley-on-Thames. Henley was less open to piracy, a menace which the Company defeated in its usual spirited fashion,

¹ See *History*, pp. 120-23.

² Not extant, but known by the preamble to the Second Agreement.

³ The Cam-Buckingham Articles show the same need for synchronising patent and agreement against pirates.

but it was further from the Company's warehouse 'between London Bridge and Bridewell'. For these reasons Ravenscroft used it more for research than for production. At each of his glasshouses Ravenscroft was allowed two chairs and corresponding staff. He employed Italian gaffers from the Netherlands. One of them, called Vincenzo Pompeio,¹ left him in or about 1677, went to Antwerp and then to Maastricht, whence he returned to the London manufacturers in 1686. Another gaffer, called Da Costa, is known to have worked at Henley (1675) and belonged to an Altarist glass family represented at Nimwegen by Baptista da Costa (about 1660-70).² The servitors may have been English.

During his first two years as a glassmaker (July 1673-July 1675) Ravenscroft succeeded in producing a quite clear white glass without accidental tint, but his metal was of a continental type and suffered from a common fault of the period. In Ravenscroft's case this was the result of using an excess of strong salt fluxes in relation to the mixture of flints calcined and white sand which formed his base. The surface effect was described by the Company as 'crizzling', and more clearly by Dr. Plot as 'a Scabrities or dull roughness irrecoverably clouding the transparency of the glass'. In several of Ravenscroft's approved lead-crystal glasses there are traces of this fault, and in the summer of 1674 it was frequent. The Company were aware of it, but they knew Ravenscroft for a good man and decided to persevere with him. Their exacting standard of 'tryalls often reitterated'³ compelled him to consult his

¹ Pholien, *Verrerie au pays de Liège*, 1899, p. 84, and Hudig, *op. cit.* pp. 17 and 67.

² *History*, p. 122, and Hudig, p. 71. I have not traced the others. Some of the Italian gaffers in London were specialists in particular kinds of work and were employed as required by several glasshouses.

³ *First Certificate*, 3 June 1676.

friends and worry at his metal until he got it right. Between September 1674 and August 1675 he gradually solved the crizzling difficulty by reducing the salts and adding lead oxide little by little. The use of lead and the beginning of London crystal may have been suggested to him by English 'Earthen wares glazed with lead', in which the Company did a large business.¹ The first hint of his success comes in the *Licence or Consent* issued by the Company on 18 September 1675 and countersigned by Ravenscroft. This document permitted him to 'Transport beyond sea to Ireland or anij other parts' any old stock not exceeding £400 'made before the first of August last' (1675), a clear indication that the glasses made before that date were not good enough for London Glass Sellers, and a reservation of the first lead crystal for London trade. The Company watched the situation for some months and then issued the famous First Certificate of 3 June 1676, a document which reveals the spirit of the Company and contains the first explicit reference to the ring of lead crystal: 'Wee the under written doe certify and attest that the defect of the flint glasses (which were formerly observed to crissel and decay) hath been redressed severall months agoe and the glasses since made have all proved durable and lasting as any glasses whatsoever. Moreover that the *usual tryalls wherewith the essay of glasses are made have been often reiterated* on these new flint glasses with entire success and easy to be done againe by any body, which proofs the former glass would not undergoe, besides *ye distinction of sound discernible by any person whatsoever*.'²

Within three months the Company found it necessary to protect their monopoly by having a 'Mark or seal'³

¹ Cf. *Court Minutes*, 21 June 1722.

² *S.P.D. Chas. II*, 381, No. 244; my italics.

³ Proprietary seals with heraldic and other devices were already in use for glass serving-bottles in bottle metal.

applied to the new wares. On the first occasion (October 1676) the seal was probably plain and was easily pirated, and in adding a necessary device the Company courteously permitted Ravenscroft (29 May 1677) to use the raven's head from his own bearings. A graceful compliment for services rendered. Glasses so marked were sold by the Company until Ravenscroft's death in 1681.

Ravenscroft's importance is not easily over-estimated, but his own work needs to be defined. His metal was increasingly enriched by lead for twenty-five years after his death, and in so far as material determines process and design it set the development of two centuries. It put England at the top of the world market because it was more durable and useful than any metal previously produced.¹ But Ravenscroft was a technologist, only concerned to pass the Company's 'essay of metal'. He was not a designer. His production list was imposed by the Company and only exists in a legal document among the Company's archives.² No paper designs are extant and 'fashions' were settled direct between Mr. Samuel Moore and the gaffers. Nine extant glasses bear the little seal with a raven's head in relief. In each and all of them the vessel is a combination of the Company's own design with the idiom of Italian gaffers who had acquired their habit of work in the Netherlands. The following is a list of these glasses:³

¹ With a possible exception of some Alexandrian crystal (Karanis type) of 2nd-4th cents. A.D.

² Reproduced in Thorpe, *History*, p. 127.

³ Previously illustrated and accessible as below: Nos. 5, 6, 7 in F. Buckley, *History*, 1924, Pls. III A, II, I; No. 2 in W. Buckley, *Europ. Glass*, Pl. 84; Nos. 1-3 and 5-9 in Thorpe, *History*, 1929, Pls. XI (1), XII, XVI (1), X (1), X (2), XIV (1), Figs. 19, 20. No. 4 was published by F. Buckley, *Antique Collector*, ii, 1931, p. 586, Fig. 2.

THE RISE OF ENGLISH CRYSTAL

A. *Bowls.*

1. Ribs in high relief, folded rim, undecorated, diam. $8\frac{3}{4}$ in. *Formerly in the C. Kirkby Mason Collection.*
2. Ribs in high relief, one horizontal thread, folded rim, diam. $9\frac{1}{2}$ in. *Wilfred Buckley Collection.*

B. *Romers.*¹

3. Slightly ribbed bowl and foot, hollow bucket strawberry-printed with wavy collar at top, H. $6\frac{1}{2}$ in. *Wilfred Buckley Collection (Plate XVI c).*
4. As No. 3, but the bowl has the decoration described as 'nip diamond waies' in the production list of 29 May 1679. H. $6\frac{1}{2}$ in. Found by Mr. A. Rohan in 1931,² by whose courtesy it is illustrated here (Plate XVI d). *Private Collection.*

C. *Bottle.*

5. Flat sided and tall necked, with string rim. Pint size of the 'bottles all over nipt diamond waies' (list, *u.s.*). H. 8 in. *British Museum.*

D. *Jug.*

6. Helmet shaped and lightly ribbed, hollow quatrefoil stem between meres. H. 9 in. Crizzled. *Formerly in the C. Kirkby Mason Collection.*

E. *Tankard.*

7. Globular with straight rim; ribs in high relief. Half-pint size. H. $3\frac{1}{2}$ in. *Victoria and Albert Museum.*

F. *Wine-glasses.*

8. Stem fragment, straight-funnel bowl, tall quatrefoil stem. *Guildhall Museum.*
9. As No. 8, short quatrefoil stem. *London Museum.*

¹ Merret's spelling, in preference to the other 17th-cent. spelling 'rummer', is useful to distinguish these early English versions of the German *Römer* from their very different descendants, the rummers of 1770 onwards.

² See F. Buckley, *Antique Collector*, ii, 1931, p. 586.

The pick of the bunch is the Mason bowl, and both bowls owe more to the gaffers than to the Company. They have a Murano quality. The quatrefoil of the wine-glasses was introduced hollow by gaffers from the Netherlands—where it is frequent—and was solidified in Savoy metal. There is no trace of it in any of the Company literature, but the straight funnel is 'Company'. The helmet jug was a European commonplace in pottery and glass, and the tankard is another shape which the Company ordered from their potters as well as from their glassmakers. The romers were of course of German extraction¹ and never happy at the Savoy, but they were certainly recognised as a Company glass, and in big 'punch bowl' sizes they went fairly well.

After Ravenscroft's death in May 1681 the Savoy glasshouse was managed under agreement² with the Company by Mr. Hawly Bishopp, Ravenscroft's partner at the London end of the concern and a man highly esteemed in the glass trade. After the expiry of Ravenscroft's seven-year patent³ no attempt was made to maintain a Savoy monopoly of the new metal and the use of an official seal was discontinued. There still exists a certain number of Company models which closely resemble the Raven glasses in metal and finish—bowls with looped threading, half tankards like the South Kensington piece, quatrefoil wine-glasses, at least one helmet jug, romers, cruets, and a few others. It is impossible to be certain whether these glasses were made under Ravenscroft, 1675–81, and were thought unworthy of a seal, or whether they were made under Bishopp's sole management. In any case they are the Company's Savoy glasses, and Savoy is the best name for them.

From 1681 the use of lead crystal was rapidly adopted

¹ Quite unlike a real German *Römer*.

² *Indenture of Agreement*, 22 February 1681/82 (Company's MSS.).

³ Not granted for lead crystal, but valid for it.

by London manufacturers, who were not tied, or not always tied, to the Company. The leading firms were Michael Rackett (Minories), John Bowles and William Lillington (Stony Street, Southwark), the Salisbury Court Glass Company, Francis Jackson and John Straw (at least two glasshouses at the Falcon Stairs and a branch at King's Lynn), and the Duke of York's Glasshouse (Hermitage Stairs, Wapping). Henry Holden (Savoy), glassmaker to the King, was a conservative old gentleman and slow in adopting the 'noxious ingredient'.

The 'Country Glassmakers' began to manufacture lead crystal about five to ten years later and under great disadvantages. They were outside the closed ring of the London industry and were not obliged to pass an essay of metal or observe an exacting standard of design. In the founding and working of lead crystal they had to start from scratch. In 1685 they tried to rush the London market with a cheap lead crystal of inferior quality and were promptly squashed by the Company. Thereafter they fell back on the trade of their own areas and it was half a century before their work—at Bristol and Newcastle—was good enough to compete with London. In the chief provincial glassfields the introduction of lead crystal was as follows:

Newcastle-on-Tyne, about 1684 (the Dagnia family).¹

Bristol,² about 1691 (John Perrott, John Little, and others).

Dublin, soon after 1690 (Philip Roche and Richard and Christopher Fitzsimons).

Stourbridge, before 1696, when there were five flint glasshouses.³

¹ See *History*, pp. 184 *seq.*

² *Brist. Glos. A.C. Trans.* xlvii, 1925, pp. 211 *seq.*

³ J. Houghton, *Letters for . . . Trade*, No. 198 (1696), who lists fifty-one flint glasshouses in England, seven of them in London. One of the 'Victory' pamphlets gives the same number.

There was an export trade before the end of the seventeenth century. During the boom years 1681-95 firms like Bowles and Lillington and Jackson and Straw made money hand over fist and began to pile in the lead with a lavish disregard of material costs. They knew that the public liked it. The Glass Sellers had a good share in this new prosperity, witness the expensive presents given to the Company by John Greene (1690), Robert Croshaw (1704), and other prominent members.¹ The crisis came in 1695. The Exchequer was being bullied for money to waste on the French war and brought forth an ill-considered scheme for taxing a number of free industries. Glass paid for the boom by inclusion in the list, at a rate of 20 per cent on 'flint', and one shilling per dozen on 'bottles'. This tax became effective as an emergency measure on 29 September 1695 and was made perpetual the following year. The industry rose to a man and fought the Exchequer for four years with meeting, pamphlet, and petition. In response to this onslaught the House appointed a Committee, and after examination of evidence from all parts of the country the tax was withdrawn as from 1 August 1699. This was the most decisive victory in the history of the industry. The Excise, when it came (1746), ruined the industry by slow degrees. If it had come in 1695 when the Company were just getting their teeth into the public, there would be no English glass to speak of.

On 9 March 1711 the Court of the Company petitioned the Mayor and Aldermen for an increase in their Livery 'because the trade of glassmaking especially in Flint and Looking glasses is much improved of late years'. An Increase to the number of sixty, as against the twenty

¹ There is no recorded gift from a member before the covered silver cup of 22 September 1687 (John Burroughs, Master 1681-82).

Assistants of 1644, was ordered in May 1712. This award marks the high point of English glass for both metal and design, and it was the appropriate recognition of a great work which the Company had done during the previous fifty years.

During that period it was the retailers, not the manufacturers, who forced the invention of an English metal and then answered it with an appropriate design. In so doing they drew out their own characteristics from a foreign and upstart trade and raised glass to be the equal of silver and cabinet-making, one of the great trio of industrial art in the time of Queen Anne. The belauded 'English craftsmen' had their part in this effect, but left to themselves they were no better and no worse than the craftsmen of other countries; and in the glass trade many of the gaffers were still Italian as late as the Increase of 1712. What made the difference in these arts was the English virtue of good shopkeeping. In the routine of a London Glass Seller shopkeeping meant three things: retail design, because only the retailer knew both ends of the trade; nursing, but not schooling, the manufacturer; and a study of the actual and possible liking of each day's customers. The English shopkeepers were incapable of putting their art into any model which was not conceived as a best-seller.

CHAPTER VI

THE BAROQUE STYLE

WITH the advent of lead crystal surviving glasses become so numerous and so varied that a treatment of individuals must give place to a treatment by types. In a historical sense there are four phases of style (baroque, baluster, rococo, Adam), sometimes crossing or overlapping, but mainly consecutive. There are also utensils—stemmed drinking-glasses (including wines and ales), candlesticks, sweetmeats, bowls of several kinds, tankards, stands, jugs, salts, tea-pots, plates, decanters, cruets, vases, and several others. Glass is usually collected by utensils, but for lack of illustrations I cannot treat it in that way here. It will be necessary to follow each style through its utensils, not the utensils through the styles. The reaction of glassmanship to fashion is the main theme.

The baroque style in lead crystal consisted in a free use of manipulative decoration, most of it done on the floor or at the chair, and not simply by inflational gesture. Its devices were rib moulding, wrythen moulding of volumes and shafts, light moulding in a radial or radial-spiral sense, trailed threading in line, festoon and loop-line, ornament 'nipt diamond ways' (cf. p. 17) or moulded to an NDW pattern, open-work stems, finials and handles, rims with basket finish, prunting, dentil fringes, pincered wings, lobed foot-rims, and some other kinds of hyaloplastic detail. On the mainland this technique was often employed, as Dutch and Flemish paintings bear witness,

for vessels of ordinary use. In London crystal it was reserved mainly for special orders and for decorative or ceremonial vessels. Aesthetically it had the effect of destroying the clear definition of shape, as such, and reducing form and ornament to a single design in terms of glass and glassmanship. In this sense the baroque style provided London with the only art of glass it has ever possessed. The identity of a particular model was maintained throughout its variants (*e.g.* Plate XVII *a*),¹ and there is no doubt that hyaloplastic models, no less than the best-selling balusters, were based on a retailer's rough-out. But in the make-up much more was left to the free impulse of the gaffer. In baroque there was much more work to leave. Wages costs² were heavy in this class of manipulation, retail prices were high; and whereas the baluster style was a response to the dumb preference of the multitude, baroque sold principally among persons capable of discrimination. Greene's orders for baroque designs were small in comparison with his orders for plain funnel drinking-glasses, but he had a regular sale for them. And in crystal of London make the sale continued regular for thirty years of the eighteenth century.

English baroque glasses have sometimes been attributed to what is called 'Venetian influence'. It is uncertain whether these words refer to the gaffer's habit of work, evident in baluster work as well as baroque, or to a dealers' ramp ('Venice glasses'), or to a fashion of the town such as Conrad von Uffenbach described in 1710. They might be held to indicate the ingrafting of Italian elements upon a native English taste. In whichever sense they may be taken they misrepresent the artistic character

¹ Thus there are several variants of the posset model shown in Plate XVII *a*, and of punch-bowls, goblets, bowls, and other hyaloplastic work.

² Cf. p. 126.

of baroque glasses both in England and on the mainland. Several of the devices already listed were invented and used at Murano, but the true Venetian style was not hyaloplastic; its typical creation was an exquisite shape, blown as thin as a soap-bubble, and unadorned. In England the only 'Venetian influence' was the Italian gaffer's lingering desire to blow lead crystal as thin, or to draw it as thin, as if it were his proper *cristallo*. As a whole the hyaloplastic treatment of glass did not belong to Southern or Italian art. In England, as on the mainland, baroque glasses sold on their appeals to a sense of decorative complexity which was of Celtic and gothic derivation. These appeals were imposed on the manufacturers at Murano by retailers in the north of Europe who knew what they could sell and ordered accordingly. Venetian '*gaillardise*', described below, is little in evidence until the end of the sixteenth century, and both at Murano and in local *façon* glasshouses it was a technical reaction to retail design, a bid for Northern trade. In English baroque glasses the 'influence' is English.

The style so hatched between the dealer and the gaffer was a repetition. The Italian Renaissance had, in the North, the same kind of effect as Romanisation. The actual makers of glass were Syrian in the one case, Italian in the other. They had been forced into routine design, Hellenic and 'antique' respectively, which was inessential to glass form and frequently hostile to it. Syrian and Italian had each his dainty thing, a glassmaker's glass, but in the North they were both aliens. In the seventeenth century, as in the third, the gaffer lost his job if he did not give the market what it liked. Baroque glassmanship was a rebirth of Seine-Rhine unrest. In openwork, NDW, and light mouldings it made use of the same devices for breaking

the clean profile natural to pure inflation, for fretting plain surfaces, and for giving the vessel and its accessories the quality of movement and pattern (Plate XIX *a*).

Seventeenth-century glass also recapitulates European taste in the trades of architecture, painting, and sculpture, where the manufacturer was equally dependent on sales appeal, but enjoyed a certain freedom of personal expression. It was part of the transformation of Renaissance art into baroque art. Wölfflin's¹ conception of 'painterly' art, as against the linear or classic art of Renaissance Italy, was argued from Hildebrand's distinction between actual and perceptual form. Linear art defines a world of being in each of its separate details, painterly or baroque art presents an impression of becoming: 'If we wish to reduce the difference between the art of Dürer and the art of Rembrandt to its most general formulation, we say that Dürer is a draughtsman and Rembrandt a painter. . . . We can further define the difference between the styles by saying that linear vision sharply distinguishes form from form, while the painterly eye on the other hand aims at that movement which passes over the sum of things.'

Wölfflin traced these two kinds of sight in painting, sculpture, and architecture of the early Renaissance period and then of the baroque period. He passed in review a large number of paintings, statuary groups, and architectural façades, and analysed the kinds of stress in composition by which the two 'visions' were respectively satisfied. By these means he developed his original distinction into four sets of contrasted appeals:

(1) Composition in terms of superimposed *planes* (e.g.

¹ H. Wölfflin, *Renaissance und Barock*, 1888, and *Kunstgeschichtliche Grundbegriffe*, 6 ed. 1923, the latter translated as *Principles of Art History* (Bell, 1932). 'Linear' in Wölfflin = classic.

Palma Vecchio); as against *recessions* conceived diagonally (Tintoretto).

(2) Closed *articulation* of each element in the design (Raphael); as against an open *movement* of the whole (Rubens).

(3) A *multiplicity* of separately defined parts (Botticelli); as against *unity* or the running together of the parts.

(4) *Clearness* of definition both of each part and of the whole (Leonardo); as against blur or '*unclearness*' (Rembrandt).

Glassy equivalents of Italian linear art do not appear at Murano until the middle of the sixteenth century. During the early Murano period (say 1440-1550) form in glass was derived from antique vessels, many of which were ultimately ceramic, and from metalwork. Such are the 'hanap' goblets (so called), the pedestal bowls, the 'classical' ewers and other overrated models of the royal period. The ornament of these vessels was largely pictorial and humane—in any case it was not a gaffer's job. The Murano glasshouses did not discover a glassy statement of quattrocento values until they developed their best seller and greatest work, the plain three-piece wine-glass. During thirty years (about 1540-70) of cheap and rapid production for the gentry of Europe they learned more about glass design than in the whole of their technical history from the fall of Damascus. Relatively the three-piece wines mark the same stage as the 'separate' drawing of Lorenzo da Credi or Botticelli, or in architecture the Palazzo Rucellai at Florence. The thin trumpeting bowl, the slim hollow thin-blown cigar-shaped stem, the isolated thin-spun foot are done with an Italian genius for the fashioning of parts. And the parts remain separate and three. The two mereses cover the 'casts' and mark the

definition of part and part. There is no over-all treatment of the surface of the metal by light moulding or water-waving. There are no hyaloplastic accessories common to two parts or connecting them.

The beginning of a painterly or baroque conception may be seen in a wine-glass of the late Mr. Wilfred Buckley's (*European Glass*, Pl. 20 c). I dare say that it is the best glass in his collection. The essential tripartite design is still evident, but the only merese is moving upwards to the bowl and makes continuity with a collar above. One is uncertain where the bowl ends. In the stem the wings are still plain unpincered trails, distinct parts, but they relate rim to foot-rim and they mark the beginning of the façade stem and the façade vessel which dominate *cristallo* throughout the seventeenth century, sometimes queering the pitch for decorative values inherent in turnery.

Henceforward the iron recedes and the chair tools come into the ascendant. Painterly unrest develops by every kind of hyaloplastic device and over all parts of the three-piece models. The profile of the bowl is made vague by a scalloping of the rim or by a gentle polygony of form. Concavities sucked in the sides add their shadowy recesses. The unity of the bowl is broken by belts and collars and hose, in clear metal or coloured. The surface is ruffled by water-waving or troughed and crested with indefinite ribs. Opaque-white feathering sets in, and turnery contributes an endless range of spiral mouldings which carry the three parts into a single movement. Of this there is no better instance than *latticino* network, the last word in Italian dexterity and an admirable use of turnery ornament. The spiral mesh, so small that it must be seen 'painterly', integrated the three pieces, and of course went well in the partless Northern beaker. Unifica-

tion is complete in covered glasses where bowl spreads into cover and cover dwindles into a high gothic finial. Here the steeple-cup has lent its aid.

Meantime the cigar stem is breaking into many knops, first plain then highly wrought, and the foot merese is moving up the stem, regardless of its use as camouflage and boundary mark. At the same time the stem becomes more and more an openwork façade in which two flanks coalesce; ears twice looped at the lobes, S-brackets with a pincered fringe like the steeple-cup, wheels and windmills, flowered columns, figures-of-eight, diamond panels. Symmetry is rigidly maintained, its detail defeating the following eye. One may describe the *Flügelglas* with snake stem and confronting creatures as the perfection of baroque glass. It was invented at Murano and to some extent made there, but it sold in the North, and was freely made in Germany and all over the Netherlands.

In England, where towers are really cloud-capped and Thorpe drew 'leaning heights' for great houses, and shows and pastimes were played across the scene, where every alien architecture has yielded satisfactions to the painterly eye, baroque glasses were bound to sell. They were made picturesque for occasions like the following. In 1591 the Queen visited Elvetham in Hampshire and the Earl of Hertford entertained her with an English medley of Italian parts: 'At the further end of the pond there was a bower close built to the brinke thereof; out of which there went a pompous array of sea-persons which waded breast high or swam till they approached neare the seate of her Majestie. Nereus, the Prophet of the Sea, attired in red silk and having a cornered cap on his curldde heade, did swimme before the rest as their pastor and guide. . . .'¹ A banquet 'all in glass and

¹ *Prog. Q. Eliz.*, 1823, iii, 101.



(a) Posset-pot, lead crystal, with 'ears of good handsome fashions' and other hyaloplastic decoration; crown contains a fleur-de-lys. English (London); late 17th century. H. 12½". D. H. Beves, Esq. See p. 181.



2 ft high

(b) Ceremonial goblet, lead crystal, figure-of-eight stem and finial. English (London); late 17th century. H. 25½". Sir Richard Garton Coll. See p. 181.



(c) Cruet-set, silver with two lead-crystal bottles. Silver by Charles Adam. English; London hallmark 1708. H. 8". Laing Art Gallery, Newcastle-upon-Tyne (loan). See p. 189.



(d) Table chandelier, lead crystal; repairs in Sheffield plate of later date. Terraced drop-knop, wined and terraced foot. English (London); c. 1700. H. 13½". V. and A. Mus.; Circ. 521 and A—1931. See p. 189.

silver'¹ was served by two hundred gentlemen in the lower gallery in the garden by the light of a hundred torches. Long tables were decorated with standing dishes of sugar work and pastry, representing the arms of the Queen and the nobility, forts, castles, men, women, birds, beasts, whales, mermaids, 'all sorts of fishes' and 'all kinds of worms'. These are descendants of Snake Thread and cousins of the baroque glass stems which are strangely configured. Ladies at this time 'did well in the pastry', having an 'art that made it seem more beauteous to the eye'. They had much to learn from the hot confectionery of glasshouses; and no doubt the more fantastic banquet glasses were sold and designed for table themes. The tricks of Thevet's gaffer² were a response to picturesque cooking in the North. Nearly always they were swept up with the crumbs. Murano made its money on frailty.

At the New Year of 1605/6 Sir Jerome Bowes made a present to the King of 'twelve drinking glasses with covers', weighed and listed with the gilt plate.³ It looks as if these were an advertisement for Broad Street, and if Broad Street could rise to such a high-class job, they may well have been capable of banquet lines. And so in Mansell's time, when special gaffers were engaged and

¹ The order of words may be commended to advocates of silver (*ibid.* iii, 118). Cf. Gotch, *Ren. Arch. in Eng.*, 1901, p. 234.

² André Thevet, at Venice soon after 1584, describes in his *Grande Insulaire* (printed in *Recueil des Voyages*, vol. xi, 1890, p. 252) a gaffer whom he saw: *Ils manient ceste matière fragile si gentiment qu'ils en disposent mille gentilleses ainsy qu'il leur vient en phantaisie. De mon temps me fut monsté un ouvrier si gaillard en son art que de petites fleustes d'orgues qui avoient quelques son harmonieux et faisoit semblablement des petis chasteaux, tourracelles et tournois tout autour et n'y avoit aucun qui ne fut ravy de veoir telle gaillardise, comme aussy les navires et galères qui'l contrefaisoit au naturel sans que rien y manquast.* Compare these objects with the confectionery list above and with the water pageant, p. 170. Some of these types are of course extant.

³ *Progr. Jas.* I, 1828, i, 596.

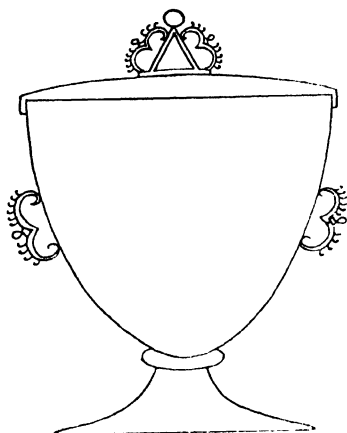


FIG. 6a.—Sloane 857, f. 10, *obv.*, 26 Jan. 1668.

'2 : dozen for beere &
2 : dozen for clarett or forty-nine.'
Height 7".

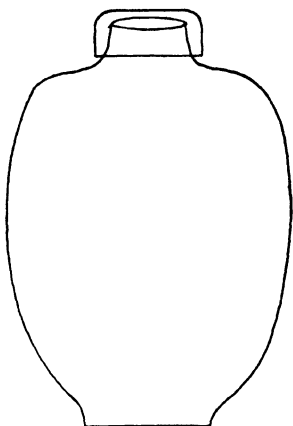


FIG. 6b.—Sloane 857, f. 21, *rev.*; about 1668.

'1 : dozen of this size and
3 : dozen as small againe
4 doz. — Must be made of
your Milke whit
glass & strong.'

(Influence of late Ming porcelain.)
Height 7".

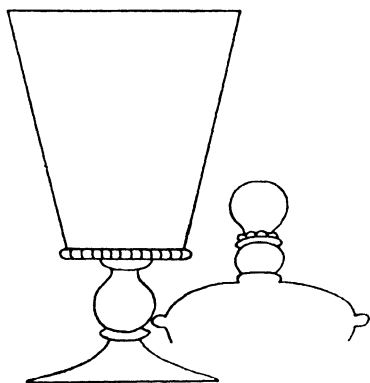


FIG. 6c.—Sloane 857, f. 9, No. 1; 26 Jan. 1668.

'12 dozen uncovered
3 dozen covered
15 D.

Lett the covers of all this fashion glasses
be of the fashion heer bj drawne with a
large ring'—written across the design.

In this size ordered mainly for beer. Height 6½".

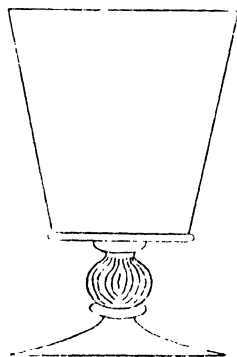


FIG. 6d.—Sloane 857, f. 9, *rev.*, No. 16; 26 Jan. 1668.

'4 : dozen wrought button
4 : dozen pla(in) ring &
button.'

Height 5½".

ENGLISH DESIGNS, 1667-73 (ONE ABOUT 1680), FOR GLASSES MADE IN VENICE AND IN LONDON

Scale reductions of tracings of actual-size drawings prepared by Messrs. Measay and Greene, Glass Sellers, King's Arms Glass Shop, London, and preserved in the British Museum, Sloane 857.

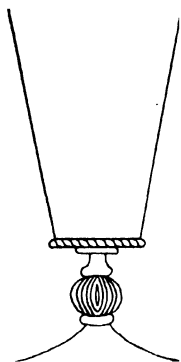


FIG. 6e.—Sloane 857, f. 6, rev. (4).
'10 dozen plaine
2 dozen ribd
for french wine.'
Height $5\frac{1}{8}$ ".

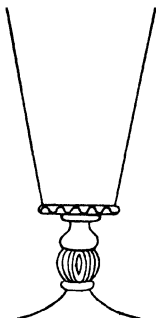


FIG. 6f.—Sloane 857, f. 6, rev. top left. Small size.
'6 dozen plaine for sack
or spanish wine.'
Height 5".

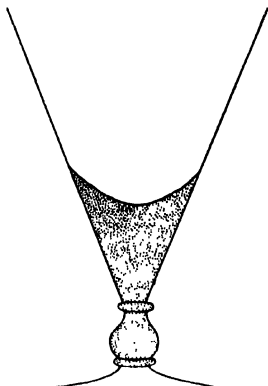


FIG. 6g.—Sloane 857, f. 35 obv. top left.
'3 dozen plaine for beer. The lower
part of theas glasses and ye button
must be sollid mettall and all the
Rest of the glass I would have to be
blown thicker than usually especially
the feet must be strong.'
Height $6\frac{1}{4}$ ".

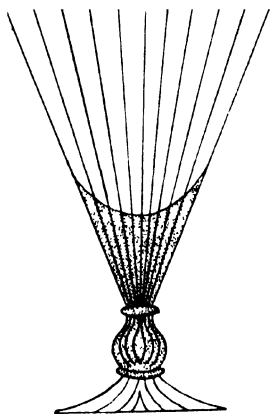


FIG. 6h.—Sloane 857, f. 35, top right.
'3 dozen for beer
the lower part of the glasses and the
button must be sollid mettall and all
the Rest of the glass I would have
to be blown thicker than . . . as feet
must be strong.'
Height $6\frac{1}{4}$ "; ribbed model $5\frac{1}{8}$ ", size
ordered for 'french wine'.

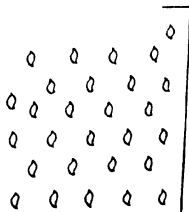


FIG. 6j.—Sloane 857, f. 10, obv. No. 21; 26 Jan. 1668.
'3 : doz for beere, very
thick and strong
3 : dozen (for french
wine).'
Height $3\frac{1}{4}$ ".

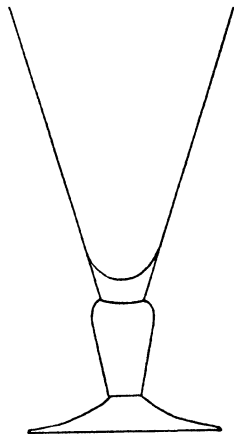


FIG. 6k.—Sloane 857, f. 43, obv., top row (No. 3).
'Company design' (see p. 185);
about 1680. Height $6\frac{1}{4}$ ".

ENGLISH DESIGNS, 1667-73 (ONE ABOUT 1680), FOR GLASSES MADE IN VENICE AND IN LONDON

Scale reductions of tracings of actual-size drawings prepared by Messrs. Measay and Greene, Glass Sellers, King's Arms Glass Shop, London, and preserved in the British Museum, Sloane 857.

'extraordinary' or 'bespoken'¹ glasses were a feature of production. Banquets were less magnificent than at Elvetham, but the demand existed in the 1660's, as Greene's designs show, and it must have existed under James I and Charles I. Greene was the John Thorpe of glass, and rightly flourished a century later. In his drawings there is no trace of the *Flügelglas* or of façaded stems, or of the Elvetham style, but he has the essential dodges of painterly glassmaking. His low beers and french wines are fretted with a diaper of leaf-shaped bosses (Sloane 857, f. 10 obv.). He has a standing bowl with a looped siphon inside, the siphon wrythen when it might be plain (f. 17 rev.). One of his bowls with two S handles has the typical scalloped rim already mentioned (f. 32). His bulb-and-trumpet drinking-glasses belong to a semi-beaker model which sold better in the North than elsewhere; and some of them, large for beer and small for French wine, have over-all ribs running foot and bulb and bowl into one vertical movement (f. 35, top right, and others). Cruets are similarly treated, and in another type of wine-glass an impressionistic effect is attained by broken half-ribs, familiar in the spiked gad-rooning of lead crystal (cf. *History*, Fig. 16 F with *History*, Pl. XXVI (1) and Pl. 18). Bulb or low-baluster stems ('buttons') are 'wrought' when they might be plain (f. 9 rev.). Composite stems, though short, are partly wrought and partly plain (f. 6 rev., top left), the wrought part making continuity with a collar (plain, wavy, straight-hatched or slant-hatched), which encircles the base of the bowl (e.g. f. 6 rev., No. 4, a model for French wine to be had 'ribd' all over if you pleased). Among these arts of vagueness 'ears of good handsome fashions' are the most characteristic. They occur usually on covered banquet cups (e.g. f. 10 obv.) 'for beere' or 'for clarett', which many

¹ 'Bespoken' for special banquet lay-outs.

English collectors would mistake for posset-pots (Fig. 6*a*). The ear in Greene has two lobes minutely fringed with scrolls for the fine duction of Murano metal and connected by a fine loop. It is used for pairs of handles (cf. Plate XVII *a*) or for flanking a cover finial. Such open-work finials form a triangular gable surmounted by an orb and flanked by fringed scrolls. They are not so lofty or so narrow as the summit of the steeple-cup or the triangular

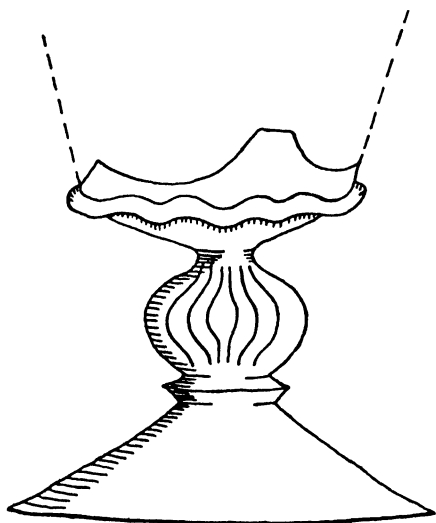


FIG. 7.—*Wine-glass stem with 'wrought button'. English design and manufacture; about 1660-75. Height 3 $\frac{3}{8}$ ". Canterbury Mus., No. 2562. A frequent type; cf. Fig. 6.*

finials of Tudor architecture, but they are a 'leaning height'. They are the contemporaries of Samuel Mearne's 'cottage' bindings and mark the gothic feeling which persists in English baroque glasses well into the eighteenth century. See Plate XVII *b* and compare the Berney Sweetmeats (*History*, Pl. LXVIII, Nos. 1 and 3). Greene never made up his mind quite clearly between pure elevations and perspective drawings. Bits of perspective are always

creeping in, because Greene had a painterly eye and could not resist seeing his glasses at distance.

The invention of lead crystal only effected a revolution in plain drinking-glasses like Greene's best-sellers. In the baroque style of banquet glasses it made no essential change. Hyaloplastic detail is still multiplied to provide a painterly effect; if anything, it is more elaborate (Plate XVII *b*). But the fine Murano tooling, for which Greene made every allowance, gives place to devices from Germany and the Netherlands.¹ The Italian gaffers in London came from the mainland and had already adapted their manipulation to non-lead crystals, much grosser than their own *cristallo* and not very different in effect from the new London metal. Lead crystal set more slowly than soda or lime-soda glasses and did not require the same accurate speed in working. It was also extremely viscous and heavy. These qualities favoured a loss of precision in hyaloplastic detail, and in consequence baroque glass began to acquire the fat, free, casual character of English slipwork pottery of the late seventeenth century. The brilliance of the metal after annealing contributed not a little to this picturesque effect. Highly wrought details in relief held the light unevenly, and when such a glass as the Beves posset-pot (Plate XVII *a*) stood on the dark polish of oak its form dissolved in silvery chiaroscuro. This effect was acceptable to the painterly eye and was not to be had in soda metals.²

All the Raven glasses are made in the baroque style, although the two wine-glasses have no hyaloplastic feature except the quatrefoil, and one or two others are fairly

¹ Cf. Plate XVII *a* with Schmidt, *Das Glas*, Fig. 84, especially No. 5, and Baar, *Restrospective . . . de la verrerie artistique belge*, 1930, Pls. IV and VI.

² Powell's are now producing painterly glass with a flint-glass base; see below, p. 252.

sorts of the best and finest drinking-glasses and *curious glasses for ornament*, meaning respectively balusters and baroque. Most of the 'Artists' were married men, and for a generation after the Victory hyaloplastic work was in the hands of their sons. The fathers hearkened back to thinness whenever they could. The sons (1700-1725) had been bred on lead since they were 'boys' and were more than half English. They were disposed to work fatter. In some nineteenth-century glasshouses the boys were free on Saturdays to work as they pleased without pattern and to invent in the making. When such work was sold, the management shared the money equally with the makers of the glass. Some of the hyaloplastic work dating from the end of the seventeenth century may well be the result of similar practices.

The following are the principal types of lead crystal vessels extant in this style, with a reference for each to books more fully illustrated than the present one:

Goblets, Chequers type (F. Buckley, Pl. VIII). This is derived from a Nuremberg and South German shape (Schmidt, Figs. 137 and 84 (2)) which became a commonplace in the Netherlands (Baar, *u.s.* Pl. IV, middle row right), but also shows a reaction to silver. The quatrefoiling is English, from the Netherlands. Cf. also Thorpe, *History*, Pls. XXIX, XXXI, 1, and XXI, 2, and W. Buckley, Pl. 63.

Façade Goblets. Openwork stems of various formations; Thorpe, *Engl. and Ir. Gl.* Fig. 5, and *History*, Pls. XXVIII, XXX (both glasses); cf. the Garton and Beadle's Staff glasses. See Plate XVII *b*.

Romers. Divided and continuous, each type prunt-stemmed or plain stemmed. W. Buckley, Pl. 85 A,

Thorpe, *History*, Pls. XXXIX all, and XL, 1 and 3. For a drinking romer see Plate XVI c.

Punch Bowls. Covered or uncovered, with or without finials, with or without loop trails, with or without canopy feet. Frequently half-ribbed. Thorpe, Pl. XXXIV and Pl. LXXVI, A, 2.

Possets (large). See Plate XVII a, and cf. the Chastleton posset (Hartshorne, Pl. 33), the Hartshorne posset (*ibid.* Fig. 173), and the Saffron Walden posset (Thorpe, Pl. XIX).

Possets (small). Numerous types, e.g. Plate XVIII e.

Drinking Glasses. Quatrefoil stemmed, wing pincer bowls and/or stems (F. Buckley, Pl. XI and Pl. IX); also with spike-gadrooned bowls.

Sweetmeats. Half-ribbed bowls and wrythen baluster and/or knopped stems; F. Buckley, Pl. XI, 3, and Thorpe, *History*, Pl. XXII, A, 1-4 and XXIII, 1 and 4. F. Buckley, Pl. XI, 1 (Thorpe, Pl. XXVI, 3, is probably a salt).

Covered Jugs. With spiked or rounded half-ribs and with or without loop trails. F. Buckley, Pl. IV; Thorpe, Pl. XVIII and Pl. XX.

Lamps. Half-ribbed. Thorpe, Pl. LX.

A full list of these utensils, and of some others less frequent, is impossible outside a dictionary. A more useful guide to style may be found in the particular hyaloplastic devices by which any utensil could be 'had' baroque. The following were chiefly used, and were, of course, varied according to the utensil or part so treated:

Half-ribs, rounded and heavy.

Half-ribs, light.

Half-ribs, 'nupt diamond ways'.

All-over ribs, light.
 Pearl moulding.
 Dimple moulding.
 Half-wrything, with or without flammiform fringe.
 All-over wrything.
 Half-ribs, spiky.
 All-over ribs, spiky.
 Zoned threading.
 Loop threading.
 Single threading.
 Ornament 'nipt diamond ways' all-over (Plate XVI *d*).
 Ornament moulded 'diamond ways'.
 Pincered fringes or bowl wings, with pincer check.
 Pincered fringes, plain.
 Wavy collars.
 Boss diapers.
 Prunts, plain.
 Prunts, strawberry.
 Lion masks.
Putti masks.
 Thick festoon threading.
 Quatrefoil bulbs ('buttons'), hollow.
 Quatrefoil bulbs, solid.
 Quatrefoil balusters, hollow.
 Quatrefoil balusters, solid.
 Wrythen bulbs, hollow ('wrought buttons').
 Wrythen knops.
 Wrythen stems.
 Open snakework, plain.
 Open snakework, wrythen.
 Open snakework, wrythen and fringed.
 Ears, plain.
 Ears, fringed.
 Stem wings, solid (usually four).

THE BAROQUE STYLE

Openwork ears, plain.

Openwork ears, fringed (Plate XVII *a*).

Openwork ears, fringed and looped.

Figure-of-eight openwork, wrythen.

Sugar-cane shafting (spiral).

Crown finials, fringed openwork.

Baskets and basket rims.

(Gabled finials, eared and fringed.)

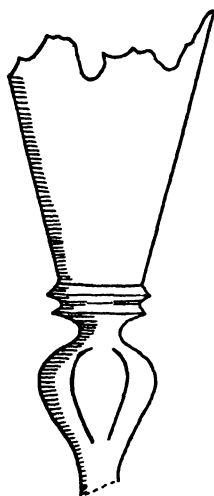


FIG. 8.—*Part of a wine-glass with straight funnel bowl, mereses, and quatrefoil stem.*
Height now $3\frac{3}{8}$ ". Found at York. About 1680–85. Yorkshire Mus.

Bird finials.

Knop shafting.

Spiral-pinnacle finials.

Multiple mereses.

Pedestal canopies.

Foot half-ribs.

The Garton goblet, two feet high, and the Beves posset (Plate XVII *a, b*) will show how it was done, some of the

bits, and the whole nature, of London baroque glass. Such vessels are the Greenwich Palaces and Castle Howards of glass. Men of mean spirit will raise a 'functional' whine, like Pope over Blenheim:

Thanks, Sir, I cried, 'tis very fine
But where d'ye sleep or where d'ye dine?
I find by all you have been telling
That 'tis a house, but not a dwelling.

No one else will ask what they are for. They share with Vanbrugh 'the majesty of a British pencil'. The Dickson sweetmeat (Plate XIX *a*) is an equally useless glass. The sons of the Artists of '95 have grown into gaffers by this time (1720), and the burden of symmetry has lifted. Here is half of Sir Hugh Platt's hour-glass,¹ with a flavour of silver salt; the parts run into one movement by spiral wrything which goes back to Turriff.

¹ *Jewel House of Art and Nature* (1594), 1653, p. 173 illus.; the three-knop formation is similar. A ball-knop type, 17 c., is at Yaxley Church, Suffolk (M. R. James, *Norf. and Suff.*, 1930, p. 82 illus.), and a knopless type, H. 7½ in., is in Bury St. Edmunds Mus. Examples with balustered wood frames are fairly frequent; for Greene's ivory-mounted lines see p. 149.

CHAPTER VII

THE BALUSTER STYLE

THE early development of a lead crystal coincided with a change in the satisfactions of English taste. This change was thus described by Lord Shaftesbury in 1712, the year of the Glass Sellers' 'Increase': 'In short we are to carry this remembrance still along with us, that the fewer the objects are besides those which are absolutely necessary in a piece, the easier it is for the eye by one simple act, and in one view to comprehend the sum or whole. The multiplication of subjects, though subaltern, renders the subordination more difficult to execute in the ordinance or composition of a work.'¹

The Queen Anne compromise is in these words. Whatever the order of architecture there were two ways of answering this 'national taste' for 'one view'. You could multiply the subalterns so that no single glance could follow their argument. Gothic and Wren had exhausted this method, and Shaftesbury disliked them both. Or you could omit the subalterns and make your designs easy to look at. Shaftesbury and the plainer wing of the Palladians preferred the second alternative: 'It is not the bulk of a Fabrick, the Richness and Quantity of the materials, the Multiplicity of the Lines, nor the gaudiness of the Finishing that gives the Grace or Beauty and Grandeur

¹ *A Notion of the Historical Draught of Hercules* (first published in French, 1712), part of Shaftesbury's great unfinished work on taste, *Second Characters* (ed. Rand, 1914, p. 56).

to a building: but the Proportion of the parts to one another and to the Whole, whether entirely plain or enriched with a few ornaments properly disposed.'¹

They were obliged to sacrifice a native genius for ornament which was still vigorous. The result was the plain style of Queen Anne.

In certain particulars already mentioned, the working quality of lead glass lent itself to an easy style of design, such as Shaftesbury had in mind and Gibbs realised. Easiness was further encouraged by the character of the crystal after annealing. Its brilliant appearance and rich smooth texture took the place of hyaloplastic ornament and allayed the fear of vacancy in baroque customers. Walnut surfaces instead of carving in oak offered the same kind of compensation. The London Glass Sellers were men who understood these things. They interpreted English palladian architecture in gaffer terms, but their market lay among Gibbs' customers rather than in the majestic circle of Vanbrugh. Their designs are thus inclined to be plain.

The baluster style was based on the design of a stemmed drinking glass and was reserved mainly for useful vessels. Its beginnings may be seen in a few of the earliest Greene designs, dated before 1670 (sack, claret, french, and beer); at which date London had 'rock crystal', but not yet lead crystal. Then, if you turn over the sheets of Sloane 857, you can watch the thing grow by averages as well as in actual change. Between 1667 and 1673 the rigaree bowl-bands begin to disappear and the short, broad straight-funnel bowls become narrower and more tapering towards the base. In this way the bowl becomes more intimate

¹ James Gibbs, *A Book of Architecture*, 1728, preface. Three kinds of people wrote at Vanbrugh: snivellers like Pope, intellectualists like Shaftesbury, and practising architects like Gibbs who had a practice among the less wealthy gentry.

with the stem. Buttons begin to be unwrought more often than wrought, they lose sphericity, they thin off upwards to become true balusters, thin off downwards to become inverted balusters. Both balusters are squat and bulbous to begin with, and then grow gradually. And while they are growing, the foot merese and the bowl merese are disappearing, though one or other of them may still linger tenaciously even in extant baluster glasses. The mature baluster has no place for a merese. Meantime solidity, shown in the designs by pencil shading, comes into demand both for baluster stems nearly mature and for bowl bottoms; but there is no sign of this before the sprouting of the button; the pure button is hollow. And even in Greene there is a tendency to knoppification, with the pure button as mainspring or with either of the balusters¹ as mainspring (f. 38 rev., lower row, No. 4). Amalgamation of two distinct bowls, the bulb-and-trumpet glass and the funnel glass, produces the standard straight-funnel bowl, as we know it in extant glasses, not so wide as Greene's funnel nor so tapering as the bulb-and-trumpet of Venice trade. This s.f. bowl runs neck and neck with the r.f. bowl, but if the tape is the year 1710 it may be said to have lost by a head. The true baluster was beaten much more easily by the inverted baluster, but the latter got some of its own back when waisted bowls came in (1710-15); it went rather well with a waisted bowl. The net effect of these tricky adaptations—and of others in Greene which defy words—was to knit the bowl and the stem and the foot into 'one view'. It was done to make people like Shaftesbury buy.

The matured baluster style, as known in the earliest baluster glasses extant, is evident in several sheets of designs bound in Sloane 857 at the end of those by

¹ True baluster and inverted baluster.

Greene (ff. 38-43). One of them is shown in Fig. 6 (*k*). There is no evidence that these designs emanated from the King's Arms. Ink and paper are slightly different, and the drawing is even more different. There are no little lapses into perspective, lines are thinner, the drawings are elevations properly centred. No quantities or descriptions are given in the familiar Greene handwriting, in fact there is no written word at all. The glasses shown, considered as averages and as actual shapes, belong to a later stage of development than the glasses designed at the King's Arms. I do not think they can be earlier than 1680, or later than 1690. Possibly they are a reference set, formerly in the hands of Richard Banner,¹ and were bound for that reason with the Company papers; but it is impossible to say who drew them. I shall call them the Company Designs.

The glasses in the 'Company' designs are all of the simple baluster type; that is, the stem is a baluster without mereses and without auxiliary knops. In extant glasses this style is at times conspicuous for thin blowing of bowl and foot, for a lingering tendency to hollowness of stem, for a thin and narrow foot-fold. This is the true 'Venetian influence'; much more usually these features are thick and solid and broad, and such massiveness increases until about 1710. The corresponding bowls are the r.f. and the s.f. already mentioned, an oval bowl borrowed from the Netherlands and found in Dutch pictures, and several types of 'double-ogee' bowl. Sweetmeats have usually a hemisphere bowl of Venetian extraction, to which is added in the 1690's a flat open type of double-ogee. In jellies the r.f. bowl is used without a stem, but often with two handles. In candlesticks and tapersticks the balusters were too short for the length of stem required, and knoppifica-

¹ See p. 152.

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tion set in comparatively early. Feet in most stem glasses are sloping domes, square domes, round domes, or ordinary conical feet; pedestal bases continue for some models. Throughout this first stage (1680-1700) the structure of a glass and its key motive the baluster were sufficiently architectural to please the new English palladians. Its plainness was almost unrelieved, but that could not last for long.

Tradesmen and customers agreed in a loud voice that Gothic was barbarous and believed that their taste was securely founded on the classic orders. It is pleasant to observe how their gothic feeling cheated them in the long run. Certainly the partless Northern beaker (of Blore Park and Sidney Wood and the 'beare glasse' notices) achieved no place in early flint, and the romer did not long prosper in England. But the flute transformed itself very cleverly into an 'ale-glass' and laughed at the gothic-haters all through the eighteenth century. It was the Kempston spirit (Plate XXI f) on a stem. And the clue to baluster development in its later stage (1690-1720) is a vertical and gothic conception. Stems grow. The broad, squat funnel glasses of Greene now become standing cups, rather fat in the stem, as Conrad von Uffenbach observed (1710), but standing cups nevertheless. This growth of stem in proportion to bowl was negotiated by silver prestige, admitted by the glass seller's 'flexible' rough-out, effected by the caprice of gaffers. The baluster gaffers were 'lead' men and English. The result is knoppification, beginning in the 1690's, reaching its greatest development about 1710, and passing thereafter into a lighter, taller phase. Knops and knop formations are almost endless, but the following are the principal types. All of them are liable to be combined with the true baluster or with the inverted baluster.

Knop-over-baluster.
 Baluster and bullet knop.
 Drop knop (*i.e.* a truncated cone).
 Squat balusters doubled.
 Mushroom knop.
 Cushion knop.
 Angular knop.
 Acorn knop (several types).
 Ball knop.
 Ring knops (multiple).
 Triple-ring knop.
 Heavy cusped knop.

To this period belong also heavy drawn stems, with or without tears, and lead versions of the Venetian 'wire' stem. In 1710 von Uffenbach witnessed a conjuring performance at the Blue Bell Tavern, Douche Street, by a Scotsman called Cherbourn, who broke wine-glasses 'by singing and shouting at them'. Cherbourn began with 'various fine stemmed glasses', including, no doubt, the wire stems (type, *History*, Pl. XLV, 3). When he came to the big knopped balusters 'most were broken slantwise at the thick knob which was as thick as a thumb and the glasses were of that thick and strong crystal which is here [England] called doppeld flint'.¹ But gentry glasses were getting lighter by this time.

The prestige of silver is more evident in glasses not used for drinking, particularly in candlesticks, tapersticks, cruets, and some sweetmeats; and at a later date in tripod salts and cream-jugs. The silver conception rarely gets beyond the rough-out. In knop work and in the treatment

¹ *London in 1710*, ed. Quarrell and Mare, 1934, p. 180. 'Double flint' was the English trade term for thicker glasses made largely for taverns. The so-called Kit-Kat glasses are a cross between wire-stems and a baluster glass, and on their day the most elegant wines of the early eighteenth century.

of feet there is little attempt to render the angular precision of silver. Turnery dominates and its effects remain glassy and fat. A process response of this kind may be illustrated by comparing knoppification in light candlesticks and tapersticks with knoppification in silver vessels of the same kind; and by comparing both with architectural shafts such as James Gibbs' designs for sundials,¹ which encourage silver but defy glass. Such judicious regard for the fashion of the town on the one hand, and for the methods of the gaffer on the other must again be laid to the credit of the Company. An instance of this at a rather earlier date appears in Plate XVII *d*, a table chandelier of great rarity as well as a handsome piece. It is too full of metal to date much after 1700—the climax of the boom in lead came in the 'nineties—and as a thing to look at it differs considerably from its four-branch relatives in silver. An actual alliance with silver is seen in the Laing cruet-set (Plate XVII *c*) with the London hall-mark of 1708. The two glass cruets have vestigial string rims derived from the service-bottle and in form are Queen Anne flint decanters marvered to fit sockets. This is one of the earliest extant sets with its original glass cruets, and if one accepts taste as it was tasted by the plainer members of the Burlington group, its design would not be easy to improve.

English achievement in industrial art has largely resulted from a desire to imitate things seen or made on the mainland, and from inability to do so. Try to copy and you may produce an English invention, but if you do not copy you do nothing. Eighteenth-century designers selected the appeal which pleased them, and left its accompaniments behind. So Colin Campbell in his appreciation (1715) of Greenwich Hospital: 'In the best remains of Antiquity

¹ *A Book of Architecture*, 1728, Pl. 145-150 and p. ii: 'In my opinion it is much better for Gentlemen to have Pedestals of this sort than Figures'.

we find great *Variety* in their proportions'.¹ Forty years later Hogarth wrote (1753) the most understanding analysis we possess of the content of English design, and he made 'variously' the adverb in chief: 'This way of composing pleasing forms is to be accomplished by making choice of variety of lines as to their shapes and dimensions; and then again by varying their situations with each other by all the different ways that can be conceived; and at the same time if a solid figure be the subject of the composition, the contents of space that is to be enclosed within those lines must be duly considered and varied too, as much as possible, with propriety. In a word, it may be said, the art of composing well is the art of varying well.'²

Hogarth illustrated the meaning of variety by contemporary³ candlesticks, chair legs, ladies' stays, bits of furniture and design, leaves, and thigh bones, arranged as ingredient units round one of his own compositions. On his title-page he summarised what he wished to say by a simple geometrical figure which remains an epitome of English art. He added the quotation from Milton:

So vary'd he and of his tortuous train
Curled many a wanton wreath in sight of Eve
To lure her eye.

His figure, reproduced herewith, took the theory out of Wölfflin's mouth. Here are recession dominating the façade, a play of contrasted planes, Thorpe's 'leaning height' and Greene's gabled finial, the lateral swing and the lit foreground and the shadowy distance. Across this background runs the 'waving line' of Hogarth's own

¹ *Vitruvius Britannicus*, i, 1715, notes on Pl. IX, my italics.

² *The Analysis of Beauty, written with a view of fixing the fluctuating ideas of taste*, 1753, chap. viii, p. 40.

³ The *Analysis* was published in 1753, but it was in his head in '45 and resumed the thought of a lifetime. 1730 is a mean date for the objects figured.

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period. No English painter has done 'fundamental brain-work' like Hogarth.

Plain wine-glasses had scarcely been balustered for twenty years when variety raised its head. Increase in stem height gave the first opportunity and produced the heavy knop formations already listed. Its next opportunity came with the rise of a German export trade, bringing German glasses to London (1709), and with the accession of the House of Hanover (1714). The Company refrained from

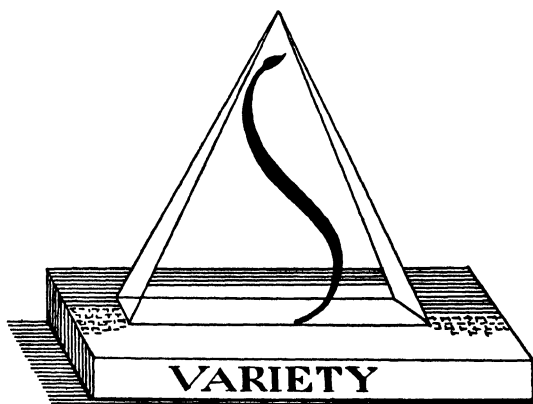


FIG. 9.—Hogarth's figure, illustrative of English taste in design (structures and paintings); about 1745–53. From *The Analysis of Beauty*, 1st ed. 1753, title-page. Cf. p. 190.

going German, but used the new ingredients to meet the growing demand for variety in design.¹ Stems and bowls were the parts chiefly affected. The industry in Bavaria, Silesia, Bohemia, and Prussia had introduced a four-sided, unturned, solid stem known to English collectors as a *silesian*. Probably this stem made its first appearance in London with a big consignment of German glasses which was sold in London in 1709. The Glass Sellers raided the auction room and stopped the sale; but they copied the

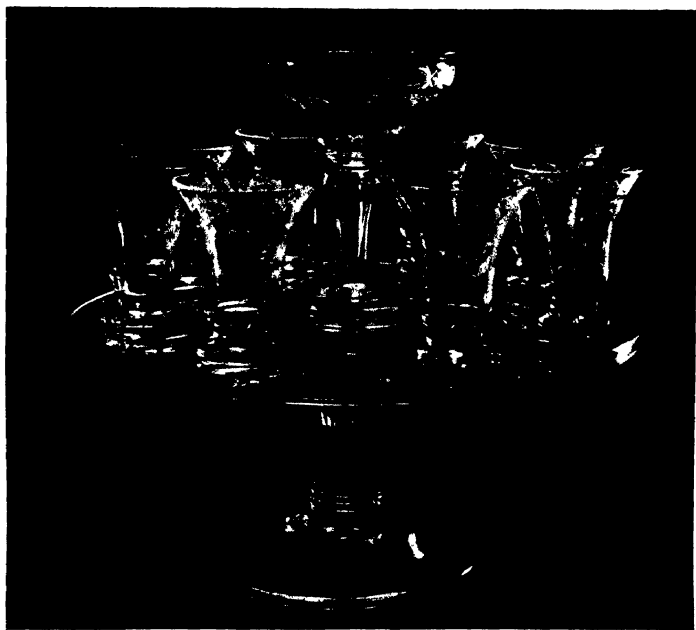
¹ There is variety of design too, but that is not the point.

stem. They had brought it to the fashionable stage by the time George I took his place on the throne, and sold it to political clubs which desired to toast the new king in appropriate glasses. In some of these glasses the shoulder of the silesian, or the square knop which surmounts it, is moulded in relief *GOD SAVE KING G[EORG]E*, one word on each side. The first-silesian was no more than a successful copy and was pretty well dead by 1720, but even in that brief time it shows a desire to knoppify. Meantime the variety taste has multiplied the sides, from four to six or eight, has changed their flatness into lively vertical reeding, has set a nail-head boss at the summit of each reed, and even twisted the reedings into a spiral movement. The second-silesians so produced are among the most decorative and most English of flint stems. They were chiefly used for gentry glasses and were in vogue from about 1715 to about 1730; some provincial and less elegant examples may be rather later. Third-silesians came in about the same time, but had a longer career; in the provinces especially they may be met in confectioners' rounds and local sweetmeats of mid-century date. Reeding still persists, but the shoulder is rounded and the bosses have lost definition or disappeared altogether.

Silesian variety was further developed by many happy combinations with the native knop forms which I have mentioned. Ball-knops, bullet-knops, bobbin-knops, single mereses and triple mereses, were freely used to foot or cap a silesian. Tall-stem vessels gave the best opportunity, and the finest designs of silesian variety are certainly to be found in candlesticks. One of the first uses of air-twist is in the bobbin knops and cusp knops of these glasses. Silesians were also welcome to later uses of hyaloplastic ornament by the sons of the 'Artists', and Mr. Andrew Hunter's sweetmeat will show how happy the results can be



(a) *Covered bowl, lead crystal, wrythen decoration, triple knop stem, rilled-panelled cover. English; c. 1720. H. 10 $\frac{3}{8}$ ". Mrs. Dickson. See p. 182.*



(b) *Stand with sweetmeat glass and eight jelly glasses, lead crystal. 'Flowered' wheel-engraving below formal borders. English; c. 1740-50. Laing Art Gallery, Newcastle-upon-Tyne. See p. 219 sq.*

(Plate XVIII *d*). And I must mention another agent of variety which has many cousins in early Georgian silver and is often to be seen in silesian company. This is the radial or radial-spiral rib, with or without a nail-head boss at its inner end. By these means the surfaces of bowls, covers and feet—feet usually domed—acquired a panelled movement. Glasses so decorated were mainly sweetmeats and candlesticks made for the gentry. They are of course later and lighter than Beves and Garton (Plate XVII), and they have lost the ‘slippy’ freedom; but they still possess the majesty of a British pencil.

For about ten years after the invasion of 1709–14, silesians were still partnered by the older native bowls (r.f., s.f., double-ogee, hemisphericals, and one or two others), just as they are still combined with native knops. These native bowls are now smaller and less massive—such was the general tendency in design—but in shape they show little alteration. The alliance was effected with a good sense of proportion, but the quiet profiles of r.f. and s.f. were hardly in keeping with an increasing liveliness of stem. And accordingly it is to the bowl that variety now extends its conquest. A sensitive curvature comes into the s.f. profile, while r.f. is prepared to evert its lip or wave the firm curve of its parabola. The flexible r.f. outlived all the silesians and had a most successful career, particularly in ‘tall-stem’ goblets, made at Newcastle-upon-Tyne and elsewhere for export to the Netherlands and for the home market. In the 1760’s tall-stem glasses with flexible r.f., plain or Beilby-painted, are among the most elegant of English rococo glasses. Mr. John Bacon has a particularly happy example with facet-cut stem. But to return to 1720, flexing of profile was introduced into sweetmeats by the treatment of the curves in the open double-ogee. From 1710 to 1730 (and later in the

provinces) double-ogee sweetmeats, plain or rib-panelled, are the most frequent and various of all sweetmeats.

When the silesian came to England it brought several of its own bowls with it, the thistle bowl, bell-bowls of various kinds, the trumpet bowl, a double-ogee bowl of oval plan, and some other types of waisted bowl. On arrival these shapes were stiff and unflowing, especially the bell and the thistle, but English sales soon altered all that. The earlier German bowls, more or less naturalised, were allied with silesians, also more or less naturalised, as well as with native baluster, knopped-baluster and light-baluster stems. This silesian alliance produced some good glasses, but it was fairly short lived. About 1725 the silesians (first, second, and third) quit the drinking-glass and thereafter confined their attention to sweetmeats, candlesticks, and other stemmed non-drinkers. Thus deserted, the German drinking-glass bowls were obliged to seek new partners among the native stems; and by this time the native stem was a light-knopped or light-baluster stem. The type known as a knopped kitkat is fairly typical of the stems available. The glasses known as light-balusters are largely the issue of these second marriages. They are the ordinary drinking-glasses of the period 1720-25—1740-50. Bells and other waisted bowls predominate, but their profile is now easy and flowing, and passes without break into the profile of the stem. Solid metal at the bowl bases serves to continue the line of the bowl with the stem, and cusped knopping becomes an important element in the design. Throughout this phase the design is a lively play of curve against curve and well illustrates the contemporary idea of variety as Hogarth understood and defined it.¹

¹ The bowl stem complex known as a thistle-acorn is a particularly good example of this tendency to run the parts together.

With a few 'high-class' exceptions the Glass Excise of 1745 killed light-balusters and the lighter knop formations which attained variety effects by using more metal than was necessary. Thereafter variety effects had to be obtained by other and less expensive means. Glasses with plain straight stems, perhaps the least interesting phase of the industry, mark the interim between the lighter balusters and the rococo twists. But in the provinces the bell-bowls and other waisted bowls were still made for some years after the Excise. In Lancashire and Yorkshire this phase is marked by the disappearance of solid bowl-bases, but the waisted shapes themselves are often agreeably stylised. They are inclined to be tall, narrow, and thin-blown, and are usually paired with plain straight stems which rather spoil the effect of the bowl. These local pieces can hardly be called gentry glasses, but even in the middle of the century gentry glass was sometimes made with knop formations; such formations are air-twisted or combined with air-twists, and properly belong to rococo glass.

CHAPTER VIII

ROCOCO

IT is a question how far the term rococo can be aptly used of English art in the middle of the eighteenth century. In England the escape from baroque was more scenic than ornamental. English rococo was a late summer of Elizabethan pageantry, 'leaning heights' and 'sea persons' replaced by rural Chinamen, Strawberry Hill gothic, irregular gardening, ruins artfully placed. To these things were happily added the ornament of pattern-book rococo. Flourish was the English name for it.

In glass particularly it may be argued that the term rococo has no place. The English gaffers stuck to turnery values, avoiding symmetrical stresses but never actually breaking symmetry. We find air-twists and wrythen bowls and more tankards with one handle than with two, but no attempt to work molten glass into the motives of rococo ornament, nothing equivalent to a silver rococo tea-caddy of the 'sixties or to scrolled vases in porcelain. Yet moulding could do this, if you desired it, as well in glass as in porcelain; and did do it in the nineteenth century.

There are three good reasons for distinguishing rococo glass. The first is the Excise Act of 1745/46, a measure which taxed glass by weight of ingredient materials¹ and drove hyaloplastic appeals off the market. The result was a smaller, lighter, daintier style than the silesian 'variety'

¹ There was a considerable reduction in the proportion of lead, the expensive and heavy ingredient. The metal is consequently less rich and oily looking.

sweetmeat or the light-balusters. Wavy profiles were adapted to the new scale of design and supported by the appeals of colouring, gilding, polished cutting, engraving and painting in white and coloured enamels. The best mid-century glasses are in debt to the London porcelain factories founded in the 'forties, to *chinoiserie* of shape and subject, to ruins, obelisks, gothic, to German cutters and Dresden painting. Rococo was in league with them all. A final warrant for 'rococo' glass may be inspected in the trade-card of the sisters Baker (Plate XX *b*), who sold china too. Here are the lettering and flourish of Beilby glasses, the mood of Bristol. The spirit of the sisters Baker presided over all the best English glass-shops for more than forty years. It is awakened in the dainty air-twist Jacobites of the Cycle Club, perfect in flowered glasses with cusped and faceted stems. It may be seen at its grandest in the Assembly Rooms opened at Newcastle in 1776. The rooms were in the new grecian style, but the great chandeliers of cut glass are still a rococo set.

Glass had many proper devices for rendering the mood of rococo within the limits of turnery or in terms of a cutter's slice. To begin with the bowls of wine-glasses. 'There is scarce a room', said Hogarth, 'where one does not see the waving line employed in some way or other. How inelegant would the shapes of all our moveables be without it? how very plain and unornamental the mouldings of cornices, and chimney pieces without the variety introduced by the *ogee* member, which is entirely composed of waving lines.'¹ Where would rococo wine-glasses be without the ogee bowl? With its natural partner the cusp it dominates mid-century design. Of the many forms in which it occurs the largest and perhaps the least elegant are those of Britannia glasses made for patriotic clubs

¹ *Analysis*, 1753, p. 48; Hogarth's italics.

during the Seven Years' War (1757-63), Williamite portrait glasses, glasses engraved in the Netherlands, and the usual 'gentry' types. In all these successful design depends on a slow eversion of the profile towards the rim. Rococo did better in little things, and the prettiest uses of the motive are in small ogees mainly used for port and cordials and combined with twisted (p. 199) plain-cusp and cut-cusp stems. Here the bowl profile descends easily into the stem profile and the two make one perfect Hogarth line. Especially when the ogee-bowl is slightly waisted and the stem is a cut-cusp.

The other lightweight rococo bowls are the drawn-trumpet, the square trumpet, the dwarf r.f., the medium r.f. (as in the tall-stem group), the bell-bowl, and the common straight-sider. Some of these were descended from the baluster period, others were a product of light-baluster variety. The effect of rococo upon them may be stated thus. When the bowl profile was already incurved, the curve quickens. So it does in a Jacobite drawn-bowl like the famous Clements bygone *Reddas incolumem*, or in one of Dr. Borenus' Jacobites. And where the profile was previously straight or sedately rounded it now acquires a lively flex or a lip-turn. Such flexes are happily used in the ogee decanters of 1750-75 and slight though they often are, they make a world of difference.

Two kinds of knopped stem are particularly characteristic of the bowls which I have mentioned. The earlier is the two-knop stem found in air-twist Jacobites about 1745-50 and in many glasses of the same period. The later type has a cusp in the middle and is perhaps seen to best advantage after cutting had sharpened the cusp. Both these stems are thoroughly rococo in their curves. A less frequent type of knopping appears in the well-known tall-stems of Newcastle, perhaps the most elegant and the most

rococo of all mid-century stems still designed in terms of the knop. With these exceptions the mid-century stems are usually straight, but the straightness is often relieved by a delicate flexing of the line, as in plain-stem and facet-stem glasses.

Hogarth¹ selected the serpentine line as an important motive in the beauty of his time (1753). In his chapter on its uses he figured a thigh-bone with its spiral coil of muscle, and a wrythen cornucopia, such as were made at that time in blue glass. He might equally well have chosen one of the 'worm'd' stems. These motives were a response to the taste which he was describing and a throw-back to the spiral wrything of Seine-Rhine. They keep a design moving as no other motive can. The air-twists were the kind most natural to glass. Technically they descended from the rows of tears commonly used for baluster decoration. They were done by pricking and covering the tears and then by drawing and at the same time twisting the metal. These were acts of turnery. Splayed air-twists were used in the variety period for middleweight drawn-stems, and for cusp items and bobbin-knops in candlesticks.² From about 1735 they passed into general use for all stem types in nearly all stemmed utensils; drawn stems, cusp stems, knop-and-cusp stems, and straight stems were the chief, and even handles and branches must be included. Single threads, splayed threads and cables are their chief species. They belong equally (but differently) to gentry glasses and common stuff, and in the former they were often combined with white and/or coloured enamel twists.

¹ *Analysis*, chap. x, 'Of Compositions with the Serpentine-line'.

² They were sometimes let into knops or balusters in mid-century stems, especially at Newcastle-on-Tyne, 1730-70. The earliest dated air-twist known to me is in a calendar at the British Museum with metal mount engraved E.C. and dated 1716. The business end of this important little object is also the earliest dated example of *millefiori* cane slices in a flint matrix.

Fashion saw the last of them about 1770, but they never died entirely.

Twists of white or coloured enamel were quite differently performed. A cylindrical mould, fluted inside, was fenced with coloured canes. Then the metal was thrust into the mould and the canes were picked up, covered, drawn and twisted into a long rod. Pattern depended on the set of the fence and on subsequent combinations of the resulting rods. Twists of a not dissimilar kind were used at Alexandria for making coiled bowls and they were freely used in Northern baroque for glasses of the *Flügelglas* type. From Bohemia they came to England, and here they are more gay and more accurate than in other countries; one scarcely notices that the stems are nearly always straight. Blue, red, green, and white were diversely combined with one another and with twists of air. Such 'mixed twists' (as they are called) belong to gentry glasses of the most elegant designs. All-white twists are not without the same distinction, but they were more catholic. They show considerable diversity of twists and twist combinations—single threads, group threads, cables, corkscrews, ribbons, paired in opposite senses or enclosed one within another. As for date, enamel twists came into vogue in the 'forties and went out of general use as a result of the tax on enamel (1777); the best mixed twists belong to the 'sixties.

During the baluster period the brilliance of lead glass was sufficient appeal to the majestic taste, and there was no *general* demand for coloured glass. But it will be remembered that Greene sometimes ordered Ming vases in milk-white Venice glass (p. 172), and although there seem to be no traces of so early an English manufacture, there do exist cobalt-blue and copper-green glasses not later than the variety period (1715-45). Romers, middleweight

drawn-stems, silesians, and wrythen ('incised') balusters exist in green. And the British Museum has lately acquired a purple Fulham-shape mug¹ which has every appearance of late seventeenth-century work. These rarities apart, the demand for opaque-white and coloured glass followed close on the new porcelain factories at Chelsea and Bow. As early as 1744 we hear that some 'composition glass' was stolen from the warehouse of Benjamin Bowles in Stony Street, Southwark, and in 1747 the White Glasshouse near St. Mary Overies Church advertised 'a quantity of glass cane for making beads of various colours' and 'also about 56 lb of white enamel and a few half pint and quarter pint green bottles for elixirs'. The famous London glass seller Jerome Johnson was connected in 1757 with the Cockpit White Flint Glasshouse near the Falcon Stairs, Southwark, and in 1758 Dossie states that 'opake white glass has been made in a considerable manufactory near London'. Enamel plates and dials were made there, and Dossie elsewhere mentions white glass made at Mr. Bowles' glasshouse in Southwark. The great house of Bowles was a power in the London glass industry for more than a hundred years, and it is likely that William or Benjamin Bowles was the man who first developed enamel glass-making in England. The firm's Southwark factories hold a place with Bow and Chelsea and with the short-lived enamel works at Battersea. In such circumstances it is more than likely that Southwark made some 'china' vessels as well as 'plates' and 'dials'.

Bristol followed London. Edward Heylin of Bow and William Cookworthy of Plymouth both had Bristol connections. The latter was already interested in porcelain in 1745, and the first manufacture of (soft) porcelain at Bristol was carried on at a glasshouse vacated in or about

¹ No. 1933-7-10-1, H. 3 in., neck trailed with fine spiral thread.

1745 by William Lowden.¹ It is uncertain who perfected the famous opaque-white fabric of Bristol, but the names of Perrott and Little and Longman may be mentioned. In 1692 John Little, glassmaker of Stourbridge, apprenticed his son to John Perrott, glassmaker of Bristol. Several Perrots were then engaged in the glass industry at Bristol. They had one or two glasshouses at Red Mead near Temple Gate, and are stated² to have come from Worcestershire (*i.e.* Old Swinford and Belbroughton). The Bristol Perrotts had a great part in the glass industry at Bristol during the first half of the eighteenth century, their best-known member being Humphrey Perrott, who took out a famous patent in 1736 for improvements of leer and kiln. Meanwhile Jacob Little acquired his own glasshouse and is known to have taken apprentices 1706–28. His is the first Bristol name associated with opaque-white glass. When he died in 1752 he was described as ‘proprietor of the White Flint³ Glasshouse at Bedminster’. In 1760 Crosse and Berrow of Redcliff Backs Glasshouse, makers of ‘White and Flint’ (*i.e.* enamel-twist glasses), went bankrupt, and the glasshouse and stock were bought by a relative of Jacob Little and a partner Longman—the famous Little and Longman for whom Michael Edkins was painting enamel glass in 1762. Williams Dunbar and

¹ One of the oldest glass families in Bristol, first mentioned 1674 (John Lowden) and frequently until 1788. Probably French (*Marie* Lowden, wife of John Lowden, 1674). The variant Loudin seems to be inferior. See *Bris. Glos. A.S.T.*, xlvii, 1925, p. 219, n. 4 (A. C. Powell).

² By E. M. S. Parker, *Comprehensive Pedigrees*, No. 2, *The Perrott family*, Weston-super-Mare, 1909.

³ ‘White’ as against ‘green’ we know to mean clear glass. ‘Flint’ alone also means clear glass. But ‘White Flint’ is an odd phrase. That it means opaque-white or enamel glass is clear from two advertisements of Williams Dunbar and Co. of Chepstow. On 7 June 1764 they advertised their glasshouse for ‘White Flint Ware’, and on 20 October 1764 ‘a flint and enamel glass manufactory’, both referring to the Chepstow glasshouse. Edkins worked for them in 1765 (F. Buckley, *History*, pp. 149–50). Cf. *Bris. Glos. A.S.T.*, u.s. pp. 240, 224, 220.

Co. began to make enamel glass about 1764 in their new glasshouse at Chepstow. But if anyone is the father of Bristol's opaque-white it is Jacob Little of Bedminster. He probably began to make it about 1745 in response to the porcelain movement.¹

The developed opaque-white metal was obtained by using a very small (0.86) percentage of tin oxide in an ordinary flint batch. It was a difficult metal to work and moulds were freely used, but its finished quality has never been equalled in any country. Its characteristics are its thinness and fragility, its pure *dense* white colour, and its high specific gravity (3.58). There is no tendency to opalescence at the edges and no 'sunset glow' when you hold a vessel up to the light—these effects are often to be seen in South Staffordshire and Tyneside 'opal'. Naturally it was used for vases derived from the Chinese and for utensils proper to the new English porcelain factories. The usual lines were *garnitures* of covered vases and 'beakers' (with *chinoiseries* all-gilt or painted in muffle colours), tea-caddies ('canisters'), tankards ('cans'),² mugs, finger-bowls, candlesticks with rococo bouquets by Edkins and other painters, sugar-basins, milk-jugs, cream-jugs, cruet-bottles, cornucopia vases spirally ribbed like Hogarth's, little oblong scent-bottles and other *galantries*, handleless tea-cups, saucers, rococo knife-handles, and long slim bottles in the Adam taste (*fl.* 1780–1840). In all these quality varies, but no other firm equalled Little and Longman and their successors at Redcliff Back. Although Edkins' bird canisters have good cause to be famous, it is in candlesticks that the art of Bristol is seen best. A candlestick like Plate XXII *d*, with its 'serpentine' writhing

¹ The earliest dated piece of Bristol opaque-white known to me is of 1757. Sir Gilbert Mellor has a wavy finger-bowl with birds, dated 1764 and signed *J.F.*

² 'Can' is still the correct trade term for what is vulgarly called a tankard.

and its flowered painting and the flexed profile of its stem, is surely the perfection of English rococo.

From Bristol and Stourbridge, intimate glassfields, the manufacture of opaque-white travelled to the North Country. It was being made at the New Glass House, Sunderland, in 1769 and passed thence to Tyneside. The metal here has the 'opal' and 'sunset' characteristics already noticed, and neither glassmanship nor painting is so fine as at Bristol. North Country cans with strap handles are sometimes painted in colours, an iron red predominating, and in a style which suggests a date about 1770.¹ But the chief development in the North will be noticed later.

The rise of coloured glass—blue, green, and later purple or puce—owed more to a rococo demand for gaiety than to the example of porcelain, though porcelain was no doubt an encouragement. London took the lead about 1750, for in 1752 smelling-bottles of cut coloured glass were sent from London to Birmingham. Some of this and later consignments may have been gilt and/or enamelled in the South Staffordshire (Bilston) area. Glass in all the capital colours was being made at Stourbridge in 1751, and domestic-and-fancy glass was certainly included. It was at Birmingham that Mayer Oppenheim (*d.* 1768–83) took out his famous patent for a flint ruby² (1764); whence came the tradition of ruby and ruby-casing in a style which successfully fails to be Bohemian (Plate XXII *e*).³ Bristol joined in the colour movement during the 'fifties and early 'sixties but can claim no special prominence in

¹ These are often called Bristol in error. They are also described as German, also in error. Subjects and style are English.

² In his fine collection of English glass Mr. Arthur Kay has an all-ruby funnel (from a travelling case), which is certainly English and seems to date from about 1770. I think it may be early Oppenheim.

³ H. 12½ in. Clear glass with decoration cut and engraved through a ruby casing; suggestion of Bristol slim-bottle form. Birmingham; about 1830–50.

the manufacture of blue and green glass. Even Warrington and Sunderland followed suit in the late 'sixties. From about 1770 decanters, port-glasses (facet-cut), finger-bowls, cruets, fancy goods, were made in all the leading areas, but during the early rococo period the manufacture was confined mainly to perfume-bottles, little boxes, and other high-class fancy goods. Some of these little objects are facet-cut and/or gilt. The prettiest are exquisitely painted with *chinoiseries*, shepherdesses, and charming bits of rococo landscape, and are among the choicest of English glasses. I must add that no *galanteries* of the 'Bristol scent-bottle' type occur in the list of glasses painted by Michael Edkins for Bristol glasshouses, and there is no satisfactory reason for connecting all of them with Bristol. The objects themselves may have been made in London or South Staffordshire or Bristol glasshouses, cut in a cutter's shop of a different town, and painted and gilt in yet a third by free-lance decorators (like Giles or the Beilbys). They belong to the ramp in rococo.

Painting on opaque-white glass at Bristol did not differ in essentials from painting on porcelain. The Bristol painters worked for the glasshouses, and either at the glasshouses or in their own homes. They were not free-lances who bought glass and then supplied the china-shops direct. Some of them had employment from the Bristol delft potteries and others were certainly porcelain-trained. Porcelain influence is evident both in choice of subjects and in treatment—English Chinamen with conical hats and umbrellas (Bristol citizens on Sunday), scenes which are *not* Chinese, rococo landscapes with figures, neat bright birds, birds exotic and even slightly 'dishevelled', flowers large and small and of diverse kinds. In all this work some five or six different hands may be detected,

but only Edkins is known for his characteristic perched birds and his intense curly flower-bunches. One of the Bristol glasshouses also did wild grassy branches with exotic birds among them, all in gilding. Painting in oil colours occurs on Bristol opaque-white and was perhaps done by retailers, in Bristol or elsewhere, who possessed no muffle kiln.

Newcastle painting was on clear drinking-glasses and was done by two *Hausmalerei* painters who bought bare glasses from the glasshouses and sold to their own customers or to the trade. It was rococo without *chinoiserie*. If subjects and feeling count for anything, it has more of English quality than any glass painting at Bristol. The best of it has a restraint and a distinction lacking in Michael Edkins and is quite independent of china painting. William Beilby (1740-1819) and his sister Mary (1749-97) were children of a Durham silversmith and shared the talent of an accomplished family. Their brother Ralph (1743-1817) was in successful practice at Newcastle as a silversmith and general engraver, and has the honour of being Thomas Bewick's master during his apprenticeship (1767-74). William and Mary lived with him and their mother and made their own living by glass painting from about 1762 until old Mrs. Beilby's death in 1778. Their work consists of heraldry in full colour with rococo accessories, real and fictitious heraldry in white with auxiliary colour, picturesque landscapes in full colour with rococo surround, scenes and landscapes in white, flowers, birds, butterflies, and vine motives in white, and various commemorative designs for weddings, masonic occasions, drinking feats,¹ and the like. Their

¹ The earliest dated Beilby glass known to me is a test goblet known as the Charlton Standard, painted in 1763 for Edward Charlton, Esq., of Hesleyside. The earliest dateable glass was painted for the birth of the Prince of Wales in 1762. See *History*, pp. 226-31; *Connoisseur*, lxxxi, 1928, pp. 10-23; and also *Connoisseur*, xcii, 1933, pp. 13 seq.

ornamental detail is very finely done and quite unmistakable, their heraldry never merely heraldic. Their 'grandest' work was done on Newcastle tall-stem glasses for English county families, but their happiest mood is in white scenes on ogee and other small glasses—shooting, fishing, hunting, skating, walks in the country, Greek columns blended with gothic ruins, picturesque England. Such work was done in engravers' taste, as the fact of monochrome shows, and owes much to the engravers of flowered and landscape glasses. Some motives are almost copies. Other white painting may be found on rococo glasses, but it is not in the same class. No one can fail to recognise the quality of Beilby enamel (with its faint blue tinge) or the sprightly twiddle of a Beilby vine. The composition of their landscapes is Hogarth's *VARIETY* figure.

The glasses used by the Beilbys, and others which are related to them, possess certain characteristics in common. This group gives a good idea of Newcastle idiom¹ in the middle of the eighteenth century. Tall stems, flexed r.f. bowls, air-twists inset in knops or balusters, air-twists passing through knops, 'tin-hat' feet, air tears in the bases of bell-bowls, air-twists issuing from such bases, stems inset in feet, opaque-white twists of rather low gradient—these elements are an overhang from the variety period and natural enough in a provincial centre which had a vigorous tradition independent of London. The tradition was created by an Altarist house, the Dagnias, and continued by their successors at the Closegate, as well as by the great firm of Cookson.²

Towards the year 1750 English glass obtained the first

¹ The features mentioned can scarcely be regarded as exclusive to Newcastle, but they are highly characteristic of Newcastle.

² See further F. Buckley, in *S.G.T.* x, pp. 26 *seq.*; Thorpe, *History*, pp. 145 *seq.*; and *Connoisseur*, xcii, 1933, pp. 13 *seq.*

place in the markets of Europe. It thus succeeded to a supremacy which had passed from Venice to Germany about 1670 and had remained with Germany for some sixty years. England did not owe this success entirely to the quality of lead crystal. Flint-glass was more durable than any continental crystal and earned some increase of sale on that score. But in the baluster period English glass was *not* acceptable to educated taste in France and Germany. It was tacitly assumed by everyone on the mainland that the essential values of a glass were thinness and delicacy. Even Conrad von Uffenbach, with the shadowy blobs of the *Römer* behind him, was a little disgusted with the grossness of double-flint. Bosc d'Antic (1760 and 1780) spoke in scathing terms of its technical defects and in the matter of taste he agreed with von Uffenbach. His *beaucoup trop lourd* is a simple and final criticism.

Cutting was the means whereby the English glass trade overcame this initial handicap. By cutting I do not mean proficiency in cutting. Any motive in English cut glass would have been child's play to German and Bohemian shops in the time of Augustus the Strong. No cutters have ever equalled them, and in English we have no words for half their daily actions. The English invention lay in making cut-glass rococo at a time (1750) when the ramp in rococo was capturing shop after shop and room after room all over Europe. English glass rode into big business on a successful and deliberate appeal to this taste: 'All foreign commissions to be executed to the utmost care and perfection.'¹ The brilliant-cutter, using wheels and emery, cannot be so free with his curves as a painter in enamel, or so gradual as a gaffer. But he had his equivalents for scroll

¹ *Whitehall Evening Post*, 19 November 1757, advertisement of Jerome Johnson, cited by F. Buckley, *Glass*, v, 1928, p. 393. The English glasshouse at Lisbon was founded about this time; see *Gent. Mag.*, xix, 1749, p. 511.

and spiral. In the 'forties and 'fifties the London cutters showed great resource in slice and snick effects which served the cause of Hogarth's VARIETY. Scale-pattern facets, hollow diamonds curving into points, wavy scalloping of rims, the arch-and-angle for rims, the arch-and-sprig for bowls, stem hexagons pointed, long stem-diamonds pointed, short stem-diamonds pointed, cut cusps, scalloped chandelier canopies in *chinoiserie* taste, crescents for table chandeliers in the 'Turkish fashion', spear-shaft gothic for chandeliers, stopper scallops for flexed ogee decanters, broad-relief diamonds, and double-cut relief with its contrast of refractive planes—all these things were agents of a rococo appeal.

Cutting was a process learned from Germany, but cut glass was a retort to the coming of porcelain from Meissen, and an English contribution to European rococo. Bosc d'Antic hated flint, but for cut glass he had the admiration of a rococo man. He chose to refer to the English cut-glass chandelier. And when, in the middle of the eighteenth century, glasshouses were founded in the Netherlands and in France to produce *verre à l'anglais* and men for the job were brought from England, lead crystal itself was not the object in view. Lead crystal was in demand because it was a good 'cutter' and chiefly in order that it might be cut. It has been customary in England to think of cut glass as a late and doubtful benefit put into trade by the Irish factories during the last fifteen years of the eighteenth century. On the contrary the *époque* of the art began well before 1740. By 1780 it was past its prime. Whatever virtue is in the early scalloped style of Cork and Waterford was an overhang from London rococo of the 'fifties and 'sixties. And London cutting was the invention of three great shopkeepers, John Akerman, Thomas Betts, and Jerome Johnson. Of Mr. Francis Buckley's many

contributions to English art history the discovery of these men and their work is surely the most important. It is an adjustment in the history of taste in the eighteenth century. To say that all cut glass is rococo would not be true; but it is truer than any other statement that can be made about cut glass.

Before I come to the great trio there are one or two preliminaries to be noticed. Diamond-engraving was first practised in England by Anthony de Lysle, the probable engraver of the Verzelini group. In the 1660's diamond-engraving may have been practised or introduced by a Dutch glass seller like Van Mildert. In the flint-glass period diamond work was never frequent. Occasionally the diamond was used for finishing the lettering of a wheel job, but it did not belong to the wheel-cutter's craft. It was occasionally used for glass by silver and general engravers (like Ralph Beilby), and by amateurs, but in some conspicuous glasses the heraldry suggests that the engraving was done in the Netherlands. An early example may be seen on a thin-blown merese drinking-glass with baluster stem in the Buxton Museum. In fashion and size the glass is similar to another diamond-engraved glass formerly in the Kirkby Mason Collection, but in the latter the baluster is replaced by a hollow bulb containing a coin of William III. Both glasses appear to be engraved by the same hand, and the subject in each case is a bird among scrolled stems.

Wheel-engraving¹ was occasionally used for inscriptions and heraldry in the time of William III and Queen Anne. It is probable that such work was done by one or two of the



¹ I need not say that most of what follows is based on Buckley's advertisements. There are no other sources. This is not a bibliography of Mr. Buckley's works and I need only give his *History*, pp. 119-41, and *Glass*, v, 1928, pp. 247, 299, 392.

numerous glass grinders (p. 151)¹ in London who had perfected themselves in a finer kind of work; at a later date several eminent cutters began life as grinders, among them Thomas Betts of London, and Samuel and John Challenge, father and son, of Newcastle (*fl.* 1757-67). In flint-glass times the earliest name known is that of Alexander Nicols, glass engraver,² at the sign of the Star, Nightingale Lane, Wapping, who was married in 1699 and must have had a business to marry on. For all that 'glass engraver' can say, he may have used wheel or diamond or both. He is contemporary with the Buxton bird group as well as with some interesting wheel-work of a political kind.

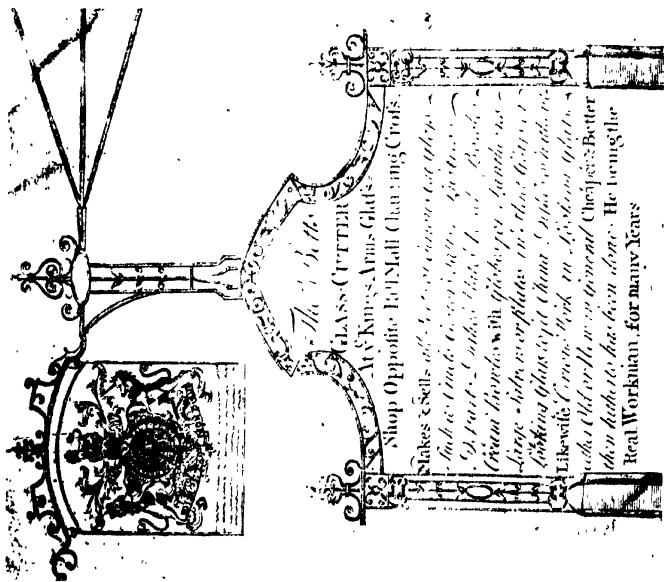
The art of cutting grew and prospered in the same kind of circumstances as *Hausmalerei* painting. It is arguable that the genius went out of the art as and when those circumstances ceased and cutting went into the glasshouses, a glyptic process among plastic men. At any rate all the best in English cutting, from cut cusps to crescent table chandeliers, was invented before that invasion. A fashion for cut glass in London was first suggested by the riot at the auction of 1709. Then came George I. In 1712 scalloped sconces, German or English, were on sale in London. In or about 1718 John Akerman, the father of English cutting, founded the firm of John Akerman and Son of Cornhill and later of the Rose and Crown, Fenchurch Street. In 1722 Lady Grisell Baillie, a Scottish housewife, went to a noble dinner-party in London and noticed the cut glasses which Akerman was then putting across: 'Jelly 6 glass, 3 of biskits hipd as high between two glasses, a high scaloped glass in the middle'. 'Scalloped'

¹ Water-power for grinding was introduced (in England) by John Roberts under patent of 15 May 1678. He was an expert in 'diamonding' (for mirrors and plates) and may well have done domestic-and-fancy glass inscriptions on demand.

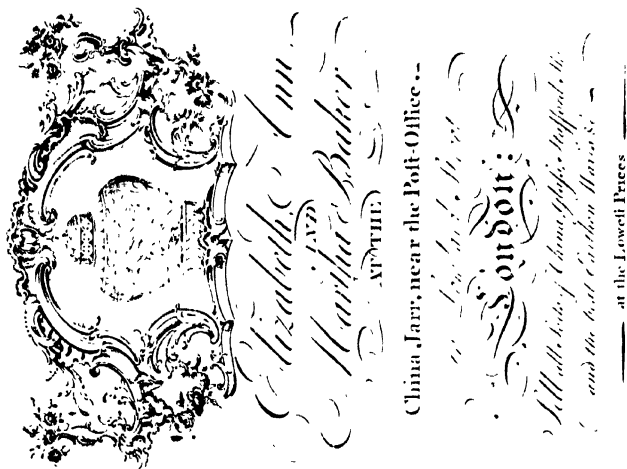
² A recent discovery by Mr. Francis Buckley.

means with a brim like this:  Six years later she saw five cut sweetmeats, as against one in 1722, and this time with 'cornered brims', thus . In the same year curious cut glass and fire lustres were being sold by London chinamen as the latest thing. Akerman was probably the source of most of these glasses. He employed a German cutter who has been identified with the father of Christopher Haedy, but his business so prospered that he probably employed several Germans. He was not a cutter himself, but in 1741 he attained the highest honour open to a Glass Seller, the Mastership of the Company. He was the first cutting man to attain that rank, and nothing further need be said of the status of cut glass in 1741. His son Isaac followed him as Master of the Company in 1756, a year after the firm became Akerman and Scrivenor; John Scrivenor was Master in 1753. Akerman, Scrivenor and Shaw were still flourishing in 1775. Akerman's patterns are not known precisely, but he must be connected with a group of early cuttings which still have the deliberation and regularity of baroque—plain rounded scallops, cornered brims (type, *History*, Pl. CIV, 3), polygonal feet, plain radial panels for feet, flat stem flutes, the small hexagon facet for stems, oval facets on domes of feet, and one or two other motives in desserts and drinking-glasses.

In his early days Akerman was not independent of English cutters whose skill had been recently acquired. This explains why in many glasses of the Akerman type cuttings are confined to the thickest and safest parts or to brims and rims—*ah! quoties perdidit auctor opus*. In the same way flat cutting is *flat* in Akerman glasses, not hollow as in rococo cruets. Glasses are not cut all over; and several features of the variety style, particularly the silesian, are still combined with cutting.



(a) Trade card of Thomas Betts, London; c. 1738-48. The original, 8" x 6 1/2". A pull from the original copperplate by courtesy of John M. Bacon, Esq. See p. 213.



(b) Trade card of Elizabeth Ann and Martha Baker, of the China Jars, Lombard Street; c. 1760. From an original print, 7 1/2" x 5 7/8", in possession of Bradford Corporation. See pp. 197, 219.

Thomas Betts was a younger contemporary of Akerman and perhaps in business on a smaller scale, for though he was a glass seller he held no office of the Company. His influence on the trade was greater. He and Johnson between them carried cut glass into the rococo style. Betts was a glass-grinder by origin, and long after he had made a success of cut glasses he continued to specialise in 'curious work in Looking glass' and other kinds of grinding. The date when he set up in business is not known, but it must have been about 1730 or a little later. He saw an opportunity in the cornered-brim fashion of Akerman and Lady Grisell. In his early days as a cutter of domestic-and-fancy he employed a German cutter, by name Andrew Pawl, from whom he learned such niceties of the wheel as were beyond the routine of a grinder. He always described himself as the 'Real Workman.' He is first mentioned in 1738, and shortly afterwards he removed from Bloomsbury to the famous King's Arms Glass Shop at Charing Cross. He died in 1767. His trade-card design was taken from a handsome ironwork sign which hung over the shop. The original copperplate was recently discovered by Mr. John M. Bacon in the possession of a lady descended from Betts, and a pull from it is here illustrated by Mr. Bacon's kind permission (Pl. XX *b*). The plate was engraved about 1748, but the sign was no doubt erected when Betts first occupied the premises (about 1738). The list on the trade-card will give a general idea of his work. 'Dessarts' include master sweetmeats, small sweetmeats, jellies, and also drinking-glasses for dessert wines—wine-glasses are often taken as read, just as cups and saucers in china advertisements. 'Lustres' include lighting pieces in a general sense—candlesticks, tapersticks, wall branches and sconces; and in view of an advertisement of Johnson's, 'the most magnificent lustre that ever was made in

England' (1739), I do not hesitate to add cut-glass hanging chandeliers. There is no question that ball-shaft design and relief cutting, as evident in the Irish chandelier at South Kensington or the Assembly Room chandeliers at Newcastle, were perfected in London glass sellers' shops during the 'forties and 'fifties. In 1780 Bosc d'Antic praised '*les lustres qu'ils [les Anglois] en font et dont ils polissent superieusement dont ils taillent et disposent avec le plus grand art toutes les pièces*'. He was paying a great compliment to the rococo of Betts and Johnson.

We also possess a set of priced bills¹ rendered by Betts between 1747 and 1761. The descriptions of the glasses make it certain that Betts used the more important agents of rococo appeal, and more than likely that he introduced them. He sold 'olive buttons', and as he also sold cut shanks he may be credited with that lovely device, the cut cusp. His 'waved pints' (1755)—small flexed-ogee decanters known to all collectors—are described in the language of Hogarth (1753) and were often fitted with 'spire stoppers' in the taste of Strawberry Hill gothic. Spear-shafts for chandeliers and girandoles were in the picturesque taste and were probably a Betts idea. To Betts also we must attribute the main development of flat facetting into hollow diamond cuttings with their rococo curves and points, frequent in cruets, decanters, and port glasses;² Betts sold 'dia[monde]d egg wines cut shanks' and 'cutt cruits stopt', with spire stoppers,³ and 'hollowed' was a favourite word with him. Stars and star girandoles or chandeliers⁴ are another feature belonging to Betts rococo

¹ In the collection of Sir Ambrose Heal, made available by F. Buckley in *Glass*, vol. v, 1928, p. 300, or in Thorpe, *History*, p. 308.

² Cf. Buckley, *History*, Pls. XLI, XXVII, A.1 and Thorpe, Pl. CXXVIII (egg wine and hollow diamonds).

³ E.g. Thorpe, *History*, Pl. CLI, 9.

⁴ E.g. *ibid.* Pl. CXXXVIII, 2.

and not to Irish classicism. And his rococo was not confined to cutting; he sold air-twists ('wormed glasses'), white and mixed twists ('enamelled shanks'), triangular bottles stopp[er]ed (cf. p. 191), Dutch shells (more Hogarth), gilt beakers¹ (cf. p. 203) perhaps in opaque-white glass, and vase bottles in blue glass; the two last more likely to be Southwark (Bowles) than Bristol make. Nor must it be forgotten that Thomas Betts was a grinder and proud of it. The broad-relief diamond is already a staple of design in mid-century desserts, and what is it but a bevel-edged mirror reduced to the *n*th? The lunar slice (another key motive) and half a dozen types of edge bevel are equally grinders' motives. The broad relief style which came into vogue in the 'fifties and captured every bench in the country (1760-90) was not a contribution from German cutting or men like Haedy the First and Pawl. It came of native grinders who had been grinding since the Restoration (p. 151).

Actual examples of Betts' work cannot be positively identified. He lost Pawl in '44. He had English apprentices and assistants, like John Shoulter of Lincoln (*f*. 1773), who started their own shops in the provinces. There were other grinders who took to brilliant cutting, notably the Challanges of Newcastle (*f*. 1757-67). But the Betts style is as clear as Chippendale; and to Chippendale does cut glass belong.

It remained for Jerome Johnson to perfect glass rococo. To Betts' refractive variety he added elegance, gaiety, humour, a civilised enjoyment of natural beauties. Though his work marks a slightly later stage than Betts, the two men were contemporaries and neighbours. Each had his own pitch and stuck to it. Betts has left us his book-keeping, the tradesmanly virtues of method and sobriety; Johnson

¹ Michael Edkins' word for opaque-white *garniture* vases, often gilt (p. 203).

is known by his advertisements. He discovers himself at Duke Street in 1739 and then at the Intire Glass Shop in the Strand, where he continued to flourish until 1761 or later. The name is a wave of his hand—‘everything!’, and Johnson himself was a man of the rococo with a flair for the moods of the Town and a vital determination to make them pay. He was the first cutting man to advertise (1751–52) ‘Turkish fashion’ and ‘Indian fashion’, and the trade and the public went into *chinoiserie* at his heels. If he followed Betts in describing himself as the ‘Real Workman’ it was with a difference. His own cutting was entirely self-taught and the term ‘flowerer’ probably came into the trade from the English assistants whom he employed. Some of the work which can be associated with him has an English quality shared only by the Beilbys. He usually called himself the ‘Maker’ and ‘Inventor’ of his wares, an effrontery foreign to Betts’ nature, but not without foundation. What he meant was, retail designer for the glasses supplied to him from the glasshouse, as well as for cuttings done at the Intire; his connection with the Cockpit White Flint Glasshouse in Southwark (1757) points to proprietary orders and perhaps to ‘china’ vases and ‘china’ scent-bottles in opaque-white glass. He had special lines for export to the Continent and to the Near East, and at a time when newspaper advertising was brief, Jerome Johnson listed the Intire shop with an expensive frequency. The following notice from the *London Evening Post* of 19 February 1751¹ is typical of the man and his style: ‘For Glass engraving or flowering, cutting, scalloping and finest polishing upon Glass in General. At the Intire Glass Shop in the Strand to be sold all sorts of fine Flint Glasses, brilliant lustres, Branches, Candlesticks, Dishes, Plates, Bowls, Basons, Cups and Covers, Saucers, Salt Cellars, Rummors cut and

¹ Buckley in *Glass*, v, 1928, p. 392.

flower'd, Desart Glasses scallop'd or engrav'd, Salvers, large Glasses for cool Tankards, Cruets and Castors, curious Lamps, Wash-hand Glasses most curiously engrav'd new fashion'd or scallop'd, and finest polish'd mugs and Pitchers, Turkish fashion'd Diamond cut and Brilliant Polished; wholesale and retail at the most reasonable rates, and to be sure no where else cheaper in London, being the first inventor—Jerome Johnson.'

In brilliant cutting the clue to his style is his word scallop. He found scalloping timorous and shallow, a matter of slow repeated curves and/or stumpy angles. He gave it depth and sweep, scalloping each scallop and giving the edges a sharper bevel. With this new and fully rococo brim-work (for desserts, lustre canopies, and the like) he combined a free play of relief cutting, using cross-cut and double-cut relief as well as the grinders' broad-relief diamond. His interest in 'Turkish fashion' suggests that the crescent summit for chandeliers and girandoles was introduced by him, and his authorship of the scalloped chandelier canopy is made exceedingly probable by his early 'magnificent lustre' of 1739 (p. 213), his known interest in *chinoiserie*, and his advertisement of 'diamond cut and scalloped lustres' in 1752.¹ The full scalloped and relief style which was taken to Dublin by London cutters in the 'fifties and later introduced by way of Stourbridge to the new factories at Waterford and Cork, was already selling well in London in 1750-52. No other conclusion is possible from Johnson's descriptions. Between 1750 and 1790 this trade rococo did not change. Where eighteenth-century cut glass of the dessert and lustre kind does not

¹ His term for flat-hollow diamonds was 'Chrystal-cut', applied to 'bottles, cruets, decanters, etc.'; in which vessels such cutting does in fact predominate. 'Diamond cut and scalloped Lustres' are *first in his list* of 17 January 1752 (Buckley, *History*, p. 121), *i.e.* the line of which he was proudest, and 'diamond-cut' implies relief diamonds.

exhibit amorphous elements or any concession to Adam elegance in form or cutting, and where fields of small identical diamonds have not yet appeared, the period date for such glass is about 1760.

But Johnson's most original and important work was the development of engraved decoration. He was the first London glass seller to describe himself as 'Glass engraver', and it was he who brought 'flowered' and 'engraved' glasses into general use. The two terms are carefully distinguished in his advertisements, the first meaning what it says, the second referring to scenes, landscapes, and figures. Before Johnson's time London engraving had been confined to heraldry and to certain baroque borders introduced by German cutters. From the end of the seventeenth century heraldic work was done on occasion in London and by the 'thirties it was a commonplace. Benjamin Payne is well known for his shop in Fleet Street called the Glass Sellers Arms. He sold cut glass in 1735 and made a speciality of heraldic engraving including 'the arms of all the Royal Family finely engraved on glasses'. He is the probable author of a well-known group with the arms of George II (Plate XXI *d*). In the same year an English engraver at Dublin, Joseph Martin, was executing 'arms, crests, words, letters or figures' for the Fitzsimmons glasshouse. Heraldry was of course conservative, and baroque surrounds continued long after rococo was generally on sale. But even in Jacobite engraving the influence of Johnson's style begins to appear; the roses stare at you heraldically, but the stems cross with a 'flowered' freedom and the buds are inclined to rebellious twiddles. A fine example of a surround in full rococo may be seen on the Holeyfurnass Bowl at Ipswich, engraved in 1768 as a present to the Corporation.

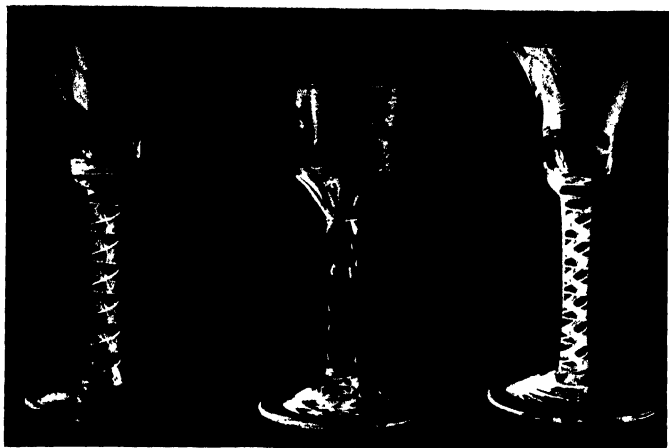
It is impossible to relate the baroque borders to any one

of the London glass sellers. They were engraved by German cutters like Pawl who had been trained in the style of Augsburg and Nuremberg pattern-books (1690–1710). Such men brought their habits—not their books—to England and gradually forgot them in the service of this or that glass seller. Like the gaffers they were given to wandering. Their work consists of confronting birds, shells, formal flowers, curled stems, symmetrical scroll-work, and formal vine motives, and it is usually done very finely. It belongs to the 'twenties and 'thirties. From about 1740 the engraving—at English hands—loses its fineness and the design its baroque formality. Vine borders came in during the 'thirties and stayed a long time; but as often as not the vine is used in non-border designs.

The lovely flowered and landscape glasses appeared out of the blue during the 1740's. They have no antecedents, in German or in English glass engraving, and in glass they have no relatives abroad. They stand alone. But it is not hard to see where they came from. Though Johnson was not a china man himself, we know from the advertisement I have quoted (p. 217) that he supplied the trade 'wholesale'. And neither the trade nor the presiding wisdom of the Company was confined to glass. In china-shops all over London, and in every provincial city of any note, glass and porcelain were sold side by side. Some of these shops were kept by ladies like Annie Miles of the Haymarket (1752), Sarah Wakelin of Bristol and Bath (1763), Miss Hodgson of London (1781), the Misses Baker of the 'China Jarr' (c. 1760). Some of these 'buyers' stocked their little shops at The Intire. Johnson, appreciating the obvious to the point of genius, snapped onto this mixed selling and created his engraved glass to suit it. On 21 December 1742 'flowered glasses' are at the bottom of Johnson's list. On 19 February 1751 and 17 January 1752 'engraved

or flowered' glasses have risen to the top of lists far longer. In the interim Chelsea and Bow had happened, and there was immense liveliness throughout the porcelain market.

Both in flowered rococo and in scenic rococo frequent parallels may be noticed between porcelain-painting and glass-engraving. There seems to be little actual copying. The suggestions first came to Johnson from the kinds of china stocked by good English china-shops in the 'forties, Chinese, Japanese kakiemon—the 'Indian fashion'—and contemporary Meissen. A little later was added the influence of English porcelain, and painting and engraving developed neck and neck. Close bunches of flowers came in during the 'forties. Stem flowers and growing flowers quickly followed. Stem-crossing is already evident in Jacobite glasses, somewhat inhibited by heraldic conventions. When politics did not enter in, roses, daffodils, carnations, daisies, honeysuckle, and the gadding vine developed greatly in freedom of drawing and in play of leaf and tendril. Such things were ready for the Beilbys to copy in the 'sixties and they also did service to the gilders. With scenes and figures that are and are not Chinese, the greatest pains were taken, and so fine is the engraving that clearly it was done for the top shelf of the showroom. Nothing could be prettier than the Roscoe ports or the bowl at the Royal Scottish Museum with its semi-polish, or the Chinese goblet at South Kensington. There are, too, fragments of the English scene—trees, landscapes, strolls, fishing, afternoon repose, obelisks, ruins, little country houses, huntings of the fox and shootings of birds. Even the Tory foxhunters have a look of ethereal joy which they have learned from faery 'Chinamen'. From the porcelain side of the shop butterflies, moths, bees, nameless flies and insects alight upon the bowls of dessert glasses; and in a familiar group of 'egg wines', birds may be seen in flight, uncertain



(a) *Wine-glass, lead crystal. Bell bowl, flowered engraving semi-polished, enamel-twist stem enclosing cable air-twist. English; third quarter 18th century. H. 7". Clifton Park Mus., Rotherham, No. 34. See p. 199.*

(b) *Wine-glass, lead crystal. Ogee bowl, sprig cutting, engraved fishing-scene; facet-cut stem. English; c. 1760. H. 6". Clifton Park Mus., Rotherham, No. 31. See p. 220.*

(c) *Wine-glass, lead crystal. Bell bowl, flowered engraving semi-polished, enamel-twist stem enclosing cable air-twist. English; third quarter 18th century. H. 7". Clifton Park Mus., Rotherham. See p. 199.*



(d) *Tall-stem drinking-glass, lead crystal, engraved with Royal Arms of England as borne by George II. Possibly engraved by Benjamin Payne, Glass Sellers Arms, Fleet Street. English; c. 1735. H. 8". Andrew Hunter, Esq. See p. 218.*

(e) *Cordial glass, lead crystal, tapering stem, flowered bowl. Probably Dublin; c. 1750. H. 6½". Andrew Hunter, Esq. See p. 219.*

(f) *Flute, lead crystal, two-knot air-twist; emblems and motto Fiat of Jacobite Cycle Club. English; c. 1745. H. 8½". Andrew Hunter, Esq. See p. 187.*

whether to be 'exotic' or whether to be game. All these things could be had on cut shanks until the 'eighties. They are not all Johnson's work—many of them are not nearly good enough—but they are Johnson's doing, artifice for the painterly eye.

This phase may be concluded with the transitional figure of Christopher Haedy. His old German father,—Haedy the First, if Mr. Buckley is right—had worked for Akerman in the 'twenties and no doubt for other London Glass Sellers. He was a good craftsman and an independent spirit, but he had no head for affairs. He launched out on his own, and by 1766 he was bankrupt and finished. Christopher took after him—and was successful. While Akerman's were the distinguished firm, Betts a sound man, and Johnson a card of genius, Christopher Haedy was a huckster by instinct. From his London headquarters at St. Clement's Inn, Foregate—an inn, not a shop—he did an enormous business in the South-west of England, particularly in the Bath and Bristol district. During the late 'sixties and 'seventies he sold, as he said, 'by hand'. His function was to distribute rococo glass in the provinces, his method that of holding snap sales in taverns and rooms. So far he was entirely derivative. His importance was that he jumped at grecian within eight years of Sir William Hamilton's great book *Antiquités étrusques grecques et romaines*, and within two years of *The Works of the brothers Adam* (vol. i, 1773). In 1775 he advertised the essentials of the new taste: girandoles ornamented with festoons of entire paste (*i.e.* strings of drops), vases with square feet, cut engraved and plain glasses of the newest pattern, curious barrel-shaped decanters cut on an entire new pattern . . . and so on. He was the London rival who gingered Bristol manufacturers into the new style. I do not suggest that he made the change all alone, but he

had a salesman's flair for novelty, and he was in on the ground floor. And if there is any conclusion to be drawn from the careers of these four men, it does not always matter who makes an article; what matters is the seller and the selling.

CHAPTER IX

ADAM TO THE PRESENT

FOR fifty years after Christopher Haedy's advertisement the English decorative arts were dominated by a romantic Scottish architect who admired Hume and had never been to Greece. By nature and by early training Robert Adam was a child of variety. His early sketches fit precisely into Hogarth's figure, and in 1782, only ten years before his death, his sketches were still picturesque. When the majestic Vanbrugh was under a cloud it was Adam who praised his 'rough jewels of inestimable value' and admitted their author to genius of the first class. Seventeen years after his visit to Rome (1756) he believed that 'movement is meant to express the rise and fall, the advance and recess with other diversity of form in the different parts of a building'. These things, he added, 'have the same effect in architecture that hill and dale, foreground and distance, swelling and sinking have in landscape'. And with one exception his work made no departure from these beliefs. He selected his own agents from orders and ornaments which he saw at Rome and knit them into an English architecture. Where he differed from his immediate predecessors was in dropping the third dimension. Variety was thus deprived of its recessive appeal and reduced to movements of line. He used 'diminished columns' and 'capitals viewed in profile'. Grave and graceful were the words which he chose to describe his aim. Almost the same words had been used

by Horace Walpole (1753) in speaking of 'the lightness and solemnity of gothic', and it is to clustered columns and fan tracery that Adam's elegance is most closely related. His disembodied façades have provoked the criticism that he was a good decorator rather than a great architect. The answer to it is in the hard-headedness of his plan and the shape of his rooms. But the criticism is a useful one. It accounts for his sovereignty over the minor arts and records his place in the native tradition of ornament. Perhaps his ceilings, with their classic agencies, are his clearest affinity with the lighter moments of Celtic enamel or Anglo-Saxon jewellery. The Kempston beaker is an Adam glass (Plate XIII c).

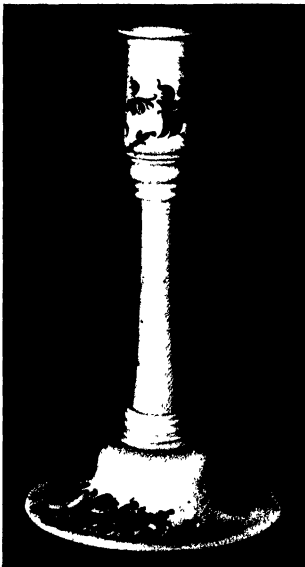
When Adam dropped the third dimension in architecture the effects on glass were a loss of bulge and a loss of turnery value. It may be said that this does not matter. You can blow full, like a Syrian carafe or a Queen Anne decanter, or you can blow wavy ogee; but when you have blown slim you have come to the end of glass play. There are three shapes, common to the trade, in which slim Adam and the gaffer may be said to have met one another half way. The first and the finest and the most varied is the taper decanter, the result of straightening out (1770) the wave of the ogee decanter. In flint it was often brilliant-cut with light festoons or engraved with labels; hollow diamonds and flowered engraving still occur, but they are survivals. Blue and green tapers were frequently gilt with labels and festoons, some of them certainly by Bristol glasshouses; the famous Jewish firm of Lazarus and Isaac Jacobs (*d.* 1790), glassmakers to George III, were inclined to mark their gilt glass in gold. Flat slim pear stoppers went with these forms, sometimes still scalloped after rococo fashion, sometimes plain; but cut characteristically to a neat bevel. The same idea of form is evident in taper



(a) *Rummer, moulded fluting, engraved SUCCESS TO THE SHEFFIELD VOLUNTEERS (founded 1792). South Yorks.; c. 1800. H. 5½". Clifton Park Mus., Rotherham. See p. 225.*

(b) *Decanter, wavythen decoration. South Yorks.; late 18th century. H. 7½". Clifton Park Mus., Rotherham, No. 38. Cf. p. 16 sq.*

(c) *Cruet, clear glass (not lead crystal), moulded fluting, blue spiral trail. Yorks.; early 19th century. H. 6½". Clifton Park Mus., Rotherham. No. 21. Cf. p. 18.*



(d) *Candlestick, opaque-white enamel glass. wavythen stem, bouquets painted by Michael Edkins. English (Bristol); c. 1765. H. 8¾". V. and A. Mus., No. C. 686-1921. See p. 203.*



(e) *Decanter, lead crystal, decoration brilliant-cut and engraved through ruby casing. English (Stourbridge-Birmingham); c. 1830-50. H. 12½". Ralph*

cruets made for silver cruet-sets during the 'eighties and 'nineties, and partly determined by their socket. Whether footed or footless, straight or slightly bulged towards the base, they are a much underrated glass; their cutting in flat over-all flutes is perfectly in accord with their tall design. Like the decanters they are a vertical straightening and narrowing of rococo. Last comes the tall 'nine-pin' bottle, in flint and blue and green and opaque-white, even in 'Nailsea' stripes. It belonged in the main to Bristol and Stourbridge manufacturers and in brighter blue, in coarser white, and in white opal it lasted well into the nineteenth century. It still slims cased-ruby in the 'thirties and 'forties (Plate XXII *e*). These three shapes are good Adam and good glass, two things not always identified. I would add that they are good gothic. Their refined ascents are to be compared with the hock-bottle (the loveliest, surely, of Northern bottles), as with the rough steeple glass from Whitstable (Plate XV *b*) and (if I may mention it again) the Kempston beaker (Plate XIII *c*).

The same tendency may be seen in drinking-glasses. Egg-wines maintained their sale until 1800, but the bowl-stem profile is already straightening in the 1780's and the stem-hexagons, and stem-diamonds are giving place to flat oval-ended flutes which carry on to the bowl. Such glasses were used by Dutch stipplers about 1780-1800, and the Adam flute is of course a stock motive in cutting for twenty or thirty years afterwards. The rummers are perhaps the most characteristic of Adam glasses and show great variety of form. They were based on a Roman silver shape, with some reminiscence of the romer, and came into use about the year 1770. From that date they were made generally until mid-Victorian times, and in a wide range of sizes from nips and gills to pints and monsters. The stems are short and straight, short and waisted,

of hue which every glassmaker wished to avoid and every collector is now supposed to admire. Freedom of lead was one of the chief causes which maintained rococo shapes and cutting in Ireland as late as 1790, fifteen or twenty years after they had gone out of fashion in England. But a certain leanness of metal was necessary for the disembodied profiles of Adam design. The English factories succeeded in this mood of the time partly because the Third and Fourth Excises compelled them to work lean. Ireland on the contrary assembled bits of grecian routine and fattened them like prize bullocks. In the essential stylisation she frequently failed. The famous round turnover bowls, whatever virtues they may possess, are a missing of the point, and in all but a few the stems and feet are clumsily made and out of proportion. Many Irish salts, sedentary bowls, covered vases, decanters, and sweetmeats are open to the same kind of criticism. There are exceptions, among them the taper decanters which Mr. Dudley Westropp has associated with Belfast. And there could be no better example of Adam feeling in glass than the great boat-salads on stems or pedestals. The early ones still have a rococo flavour of curve and scalloping. When this has disappeared the boat-salad shows an evident regard for the relation of mass to profile and a light sliced cutting agreeable to the stylisation of the whole. No English factory produced so fine a vessel.

Ceiling chandeliers naturally take first place among lighting pieces. Five or six hundred pounds was a normal price for large salon chandeliers, and at that price the fashion changed slowly. Rococo chandeliers with ball shafts cut in relief and diamond-cut or scalloped branches, were still being made in the 1780's, but as early as 1770 urn-motives were beginning to intrude into the shaft composition. Christopher Haedy's advertisements of 1775

point to the early development of drops in 'classical' festoons, and we know from a letter of Perry and Co., dated 1788, that facet-cut branches (and no doubt scalloped branches) were giving way to fluted or plain branches. These were only nibblings at an established mode. To change rococo into Adam it was necessary to 'diminish' the great shaft and design the whole chandelier taller in relation to its diameter. During the 1780's an increasing use of light drop festoons went some way to attain this end, but the lean Scottish elegance of Robert Adam was not fully realised until the shaft-and-branch structure was abandoned altogether. This was succeeded about 1800 by a configuration of glass fingers arranged in concentric fringes. Urn-like suggestions may be seen in the over-all design, but the narrow rising movement is that of a gothic spire. The Ironmongers Company possesses a fine example of this grecian gothic, given in 1804 and probably made for the gift. By that time chandelier design has reached the same maturity as Adam architecture twenty years earlier. I do not know why the finger-fringe models are held in such poor esteem. They present the adverbs of their time and they are as well designed, piece for piece, as the chandeliers of rococo.

The table chandelier and its affinity the epergne were subjects of a like transition. Spear-shafts, crescents, Chinese canopies, stars, stem-diamonds, scalloping, disappear. The urn comes in as a summit or a shaft motive, and turned feet give place to square pedestals of neat proportions, often set with figured panels of Wedgwood's blue jasper. Festoons were used with great discrimination to give the design an ascending grace. Candlesticks were less expensive and exclusive, and on the whole less successful. The most characteristic pattern of the period 1780-1800, both in England and Ireland, had a heavy square foot

and a heavy urn stem, saleable grecian routine without the English stylisation. The diminished column is seen to advantage in late facet-cut stems and in a few candlesticks where the column is moulded. But it is hard to find a lighting glass of equal grace to the sheraton table leg.

Several uses of the wheels have already been mentioned, and I have now to give a summary of the rest. About 1750 Christopher Fitzsimons of the Round Glasshouse, Dublin, obtained a set of brilliant-cutters who had been trained in the London shops. This was the first occasion on which cutters had left their natural home—the retailer's shop—for a works cutting-room. It is likely that cutting went to Stourbridge from the same source about ten years later. A chandelier, probably cut, was made at Stourbridge about 1760, and in 1780 cutting was a routine process. About 1790 James Dovey of Stourbridge and John Benson of Dudley introduced a steam-driven plant which was in general use by 1810. The naturalisation of cutting in the glasshouse had several important consequences. One of them was the development of surface cutting to the exclusion of decorative engraving. From about 1780 nothing original was done. The older motives (*e.g.* Pl. XXI) were occasionally repeated, but most of the engravers now took their money on commemoration: victors and victories by sea and land, sporting events of all kinds, party politics, ships and shipbuilding, engineering works, agricultural depression, family events, heraldry, fellowship and society work, temperance, piety, presentations, mementos, souvenirs, and much else that is characteristic of the earlier part of the nineteenth century. Some of this work is quite competent. The decorative influence of Adam is confined to festoons, rosettes, and several kinds of formal border of the egg-and-dart type. At the end of the eighteenth century these motives may be neat and effective.

The other consequence of 'naturalisation' was a closer relationship between the design of the vessel and the design of the cutting. Vessels were made in shapes suitable for cutting, and much of the finest rococo cut glass (1750-90) owes its excellence to this fact. I refer particularly to non-drinking glasses, for no factory cutting ever equalled the crispness and gaiety of cut-shank glasses, where the shop cutters had to make the best of models obtained from the glasshouses. The rich curved slicing and broad refractive planes of factory rococo were succeeded about 1790 by regularity of pattern and loss of relief, another reaction to Adam ornament. Flute cutting is the hall-mark of this style and was applied to decanter necks, decanter bases, drinking-glass stems, drinking-glass bowls, in fact to any flutable part. The collateral effect on relief may be described as: (1) a substitution of discrete cutting fields, of rectangular or at least regular form, for the rococo combination of slice and diamond; (2) a reduction in the area of each uniform cut motive; (3) a reduction in the degree of relief. This 'miniature' style developed early in the 'nineties and is seen at its best in Penrose-marked decanters made at Waterford before the last of the brothers Penrose went out of the firm (1799). The principal agents of this style in England and Ireland were: herring-bone trough-and-crest, close-set slant borders, medium nail-heads, small nail-heads, miniature diamonds, strawberry diamonds, step cutting (or horizontal prismatics), vertical prismatics, dovetail prismatics, stars, fillets, festoons, fan-cut and dentil-cut edges, and many others. I must not give the impression that the scale is always so small as in Penrose decanters. At times it is; and the use of trough-and-crest herring-bones in table-ware is witness to its success in England. But some of the best cut glass of 1800-1810 made use of all-over step cutting, or

contrasted panels of different prismatics, or prismatics alternate with diamond fields. Some of the 1800-1810 cutting possesses a period sense of pattern and shows a genuine understanding of what may be done by cutting glass.

As a third consequence of cutting-in-the-factory instead of cutting-in-the-shop, cutting became a vested interest of a peculiar kind. Articles were naturally priced by the amount of work required for their production. The more cutting in a glass, the higher its price. Markets were developed, businesses were costed, wages were found and paid on this basis. Manufacturers found it impossible to carry on if they cut less and lost the margin of profit which the bit of extra afforded them. That this situation existed in 1790 is proved by the later items in Perry's pattern-books as well as by dozens of extant glasses. The well-known designs of Samuel Miller, foreman cutter at Waterford about 1830, show that it was then economically impossible to cut *less*. As this situation developed, the manufacturers ceased to make the appeals of 'novelty' and 'fashion' and 'choice', appeals which are economically and artistically healthy. They fell back on glint and snobbery. Cut-glass snobbery was in existence as early as 1810, when Yorkshire glasshouses were producing Adam cruets in 'boiled up' bottle metal with mould-blown decoration in imitation of cutting—prismatics alternate with diamond fields. As the dilemma of factory cutting became more set, the cut-glass trade had recourse to the diseased advertising of 'fine old quality' and 'English tradition'. No one will deny that in metal and in cutting Stourbridge crystal is technically the best in the world. But English tradition in the glass trade does not mean an appeal to habit. It means the method of the early Glass Sellers and the London shop cutters, a flagrant commercial appeal to the latest 'curious' fashion.

In spite of the development of cutting and a considerable overseas trade the half-century 1785-1835 was a lean period. The repeated Excises (1745, 1777, 1781, 1787) lay heavy on the whole industry. Bristol was further handicapped by lack of pit-head coal and was gradually surpassed by Birmingham and Tyneside. The Bristol industry did not die out. The black cones of the glasshouses were still part of the Bristol scene in 1820, and four Bristol firms lived until 1833. One of them was the great house of Ricketts, famous for cut glass and coloured glass. It still existed as Ricketts and Powell in 1872, when Hugh Owen wrote the swan-song of the arts of fire at Bristol. Coloured glass of a brighter hue was made during this period, but Lazarus and Isaac Jacobs were the last house to produce the opaque-white glass. The manufacture of opal and coloured glass was translated to Birmingham, Stourbridge, Gateshead, and Sunderland. Two types at least are well worth collecting: opaque-white vases with gauffered rims and flower-painting in a rather Billingsley style; and small bottles, boxes, and the like, of blue and other coloured glass painted in white enamel with children at play. Some of this cottage rococo is nicely done and has much charm.

The Nailsea glasshouses were an important connection between Bristol and her successors. In 1788 J. R. Lucas, a Bristol bottle-maker, opened a crown glasshouse at Nailsea Heath and subsequently started a bottle-house in the same place. With a view to evading the Excise, the Nailsea works began to produce domestic and fancy glass in bottle metal of good quality, and the Bristol tradition of enamel glass was applied for this purpose. French, and probably Italian, glassmakers were introduced. Nailsea glass was a transition from decorated bottle metal to clear and coloured glass. Early Nailsea consists of large bowls, stemmed bowls, large jugs, carafes, bottles, field flasks,

and double or quadruple flasks, tankards, mugs, pans, and ornaments. The metal of the ground is usually dark green or black-green, and at its best has a softness of tone equal to *Waldglas* in the finest German *Römer*. The darker metal was decorated with a medley of spots and splashes in white and colours. Bold fronds were applied in white with the freedom and vigour of a delft brush. Chunks of coloured cane were enclosed in the shadowy metal like half-sucked sweets in green water—only Nailsea would have thought of such a thing. Threads and broader ribbons in white and rich Anglo-Saxon colour were laid on in spiral lines or tensely twisted into whorls. Loops of the same kind were rippled one upon another like the taut lines of drapery over knees in a Winchester gospel.

In 1810 the firm of J. R. Lucas, William Chance, Edward Homer, and William Coathupe passed into the hands of William Chance's son, R. L. Chance. Thus appears the greatest name in the glass industry of the present time. R. L. Chance was a friend of the famous George Bontemps and a scientific industrialist. He created Spon Lane and laid the foundation of the modern plate-glass industry. His accession at Nailsea marks the decline of the bottle-metal tradition of Lucas and the development of many Nailsea types (particularly flasks of various kinds), with white and coloured decoration in a clear-glass matrix. The death of old Lucas in 1828 seems to introduce a third phase in the firm's history and the development of massed colour loops without a matrix and small-scale feather patterns; both kinds of decoration are found in mid-Victorian shapes. The various kinds of Nailsea decoration followed the Chance connection to Birmingham and also spread to Warrington (where some of the best 'Nailsea' was made), St. Helens, and the North. Blotch decoration probably arose independently in many bottle factories. Not so the

looped flasks. At Nailsea itself the types which I have mentioned were made during the Coathupe period until the works closed in 1873. 'Nailsea' glasses cannot usually be assigned to Nailsea or any other factory, but the best of the bottle-metal pieces were undoubtedly made there, and some other pieces have local associations. Such questions are of little importance. Nailsea stands back from the civilised interplay of tradition and contact. Untouched by any kind of revival, it carried the taste of the twelfth century into the back-streets of Birmingham and Lancashire. This was no mean achievement. Other outcrops of the same kind may be found in Victorian art, Birmingham paper-weights among them.

The firm of Apsley Pellatt of the Falcon Glass Works, Holland Street, Southwark, was founded about 1790 by Apsley Pellatt I on premises previously occupied by Cox and Co., and continued to make glass at the Falcon until 1878, at New Cross until 1895. It owed its successes to the founder's son, Apsley Pellatt II (1791-1863), a man of initiative and ability. The Falcon was primarily a house for cut glass, and about 1810 was producing shapes and styles of cutting little different from the contemporary work of Stourbridge, Waterford, Cork, Whittington, and numerous other factories in England and Ireland. A well-known type of cut-glass jug with a broad mouth is characteristic of the Falcon, and to this may be added fields of strawberry and nailhead diamonds, prismatics, cut handles, solid ball stoppers cut with relief diamonds, radially cut feet. A highly cut style, comparable with the Miller designs (1830) but different in particulars, was in existence at the Falcon in 1810. From about that date the younger Pellatt took an increasing part in the firm's affairs. Pellatt acquired a wide knowledge of process and production in all parts of Europe and was the first Englishman to make a study of ancient glass.

This interest, and the example of French glassmakers, led him to the cameo incrustations which first made his firm's name. A white paste, made of china clay and a super-silicate of potash, and infusible at the fusing temperature of glass, was moulded into reliefs, medallions, figures, and the like. The gaffer then blew a hollow socket on his iron and opened it at the further end. The incrustation was thrust into it, the socket closed, and the 'fit' completed by suction. Small incrustations were applied hot on the surface of a hot vessel and covered with a layer of the fused metal. Many of the vessels so decorated were cut at a later stage.

The usual subjects were coins, medals, portraits of contemporary celebrities, *putti*, classical deities, nymphs, and allegorical figures. The modelling, if one may use the term, is good of its kind and illustrates the 'grecian' preference for flat relief instead of the full-bodied round. The prevailing influence was that of Canova mollified by French sentiment, but Pellatt had a great admiration for Josiah Wedgwood and no doubt wanted to emulate his famous jasper medallions. He also made respectful acknowledgment to the work of James Tassie. Cameo incrustation is perhaps an abuse of glass, and it is not in the taste of the present time. But it is good period and good work and will come back when the Grecians get their due.

Pellatt's cameos were still on sale in 1851, but in the meantime the firm's production had developed in other directions. One of their show pieces at the Great Exhibition was a twenty-four-foot chandelier of blue, white, and ruby glass in the 'Alhambra' style of the Brighton Pavilion. The table sets were of 'Anglo-Venetian glass', some of it gilt, some of it frosted. Cut crystal was there, but it was not 'featured'. These things were greatly to the credit of the firm. Apsley Pellatt was leader of the industry.

He related glass to the taste of the moment where others still worked in the manner of 1810. It was not his fault that he believed more in 'admiration and imitation'¹ than in 'intimate acquaintance with the nature of molten glass'.² Nor was it his fault that he filled the antiquary Roach Smith with errors on the subject of ancient glass. They were the best errors available.

Several circumstances combined to change late Georgian into Victorian glass. Press-moulding was an American process introduced into England about 1830. The apparatus consisted of a table fitted with a changeable metal mould and with a plunger thrust into the mould from above by means of a powerful hand-lever. It was best suited to flat and open forms, trays, plates, dishes, and bowls. The operation of the lever was more an act of strength than of skill, but to fill a given mould exactly required a nice judgment on the part of the gatherer. Contact with metal moulds, sometimes cooler than the working glass, caused an agreeable dullness of surface, but ideas of glass were so far determined by the vogue of polished crystal that this quality was regarded as a defect. It was even removed by fire polish. A few of the simpler shapes were process-determined, but there was little attempt at process decoration. Surface patterns were taken from cut and over-cut glass, and the process was improved to ensure the same sharpness of edge. One of the Exhibitors of 1851 recommended his glass because you could not distinguish it from cutting. It is easy to be amused. But every new process in the arts has designed in terms of its predecessors: stained-glass windows as mosaic, T'ang pottery as Han bronze, blown glass as silver or sand-core, flint as *cristallo*.

¹ *Curiosities of Glassmaking*, 1849, advertisement, penultimate paragraph.

² H. J. Powell, *Glassmaking in England*, 1923, last paragraph, where the creed of Powell is admirably stated.

The Yorkshire and Tyneside pressed-cutting houses had Ennion on their side. We have now passed the stage of Ennion, and the glass of the hardware shops is still pressed into cutting, and as sharp as ever.

I pass now to a complex of foreign competition, Georges Bontemps and the Gothic Revival. At the beginning of the nineteenth century the Bohemian cut-glass manufacturers found themselves beaten at their own game by English cut crystal. They began to imitate it and have done so ever since. They retorted much more effectively with invention in their own tradition. Among these were the hyalith of Georg Bouquoi (1781-1851), the lithyalin of Friedrich Eggermann (1777-1864), and other developments of coloured glass in imitation of jasper, amethyst, opal, chrysoprase, turquoise, rose-quartz, and other natural stones. With these came the perfection of a gold-ruby and the rise of cased-glass and cut cased-glass in ruby, blue, white, clear, and other layer colours. For some years before the Exhibition these fabrics were made known in England by Bohemian and Austrian firms who had showrooms in London and made the pace for English manufacturers. About the same time Bigaglia had London showrooms, and their work began to win recognition in English glasshouses. The Venetians had retained their baroque habit from the end of the seventeenth century, but England was incapable of such manufacture, and English Venetian (1840-60) was not unhappy. The Falcon made pretty 'Venetian' glasses with frosting and gilding, and George Bacchus and Son at Birmingham ran a pleasant set with wavy and hemispherical bowls and with stems twisted into a horizontal figure-of-eight. This renewed interest in Venice was indirectly the cause of two Victorian shapes which will bear comparison with any in English glass: a decanter or claret jug with a squat bulbous body and a long neck; and a

delicate champagne with light stem and thin hemispherical bowl. Both these types were often abused on the wheel, but that was not their fault.

Georges Bontemps of Choisy-le-Roi, near Paris, was one of the most famous of French glassmakers. Most of his work lay in departments of glassmaking outside the scope of this book, but he had a collateral influence on the development of colour for domestic-and-fancy glass. About 1826 he discovered the mediaeval method of making a copper ruby, and from 1832 he was closely associated with Chance's in a new process for making sheet glass. Coloured sheet was made at Spon Lane from 1837, and in 1848 the colour department was placed in the charge of Bontemps. Copper ruby and sheet glass in other colours were made in great quantities to supply gothic revivalists with imitation stained-glass windows. Research in the chemistry of vitreous colour was greatly stimulated in this way and coloured table glass began to be a serious rival of cut crystal. But the technology of colour was no part of the 'industrial revolution' in glassmaking. Process was not affected. And it is doubtful whether the technologists of 1850 knew more about the means to colour than Alexandria in the third century, Lorraine in the fourteenth century, or Murano in the seventeenth. Cased ruby, the most characteristic table glass of 1851, was done by manipulation of Alexandrian antiquity.

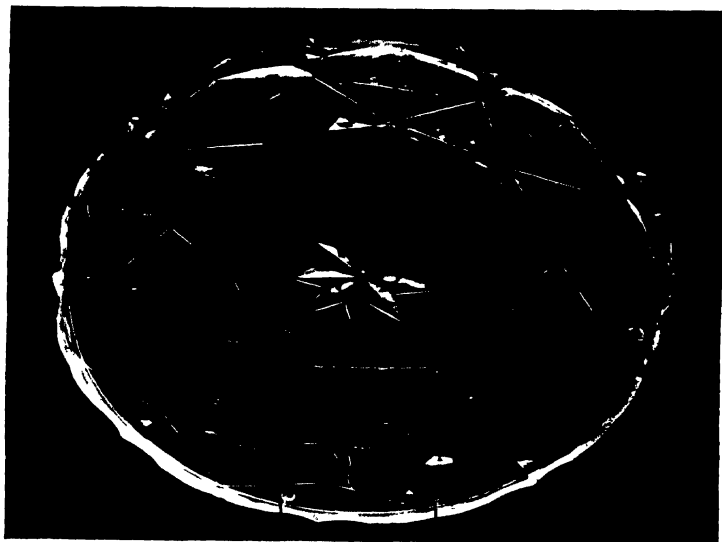
In 1833 a Royal Commission was appointed to consider the state of the glass industry and the disastrous consequences of the Excise régime on the administration of glasshouses and the production of glass. Nothing was done for twelve years, but the interval was broken by the Queen's marriage with Albert the Great. The Repeal of the Excise (1845) was one of the first acts of the new enlightenment and the beginning of an era of prosperity. One might

expect an immediate effect on the fabric which had been hit hardest by taxation. The contrary happened. There was no general rehabilitation of flint glass, as that term is usually understood. The Repeal served two uses. It provided an economic outlet for researches in glass technology which had been inhibited during the previous fifteen years. And it happened in time for the industry to make a distinguished contribution to the purpose and mood of the Great Exhibition.

The Exhibition was largely a personal achievement of the Prince Consort. It was part of an attempt to clear up the confusion of process caused by the invasion of machinery into manual arts; to define the respective fields of mechanical and manual production; and to make designers aware of the process values of machinery. At that stage it showed extraordinary insight. The words 'design' and 'designer' were as much in evidence as now, and the aims of several contemporary bodies still contain nothing of which the Albertians were unaware. The glass was well designed, if one excepts the 'pressed cutting' and some of the cut crystal. In Osler's famous cut-crystal fountain, 'by universal consent one of the most beautiful objects at the Exhibition', the proportions are good and the medium is realised. The same may be said of the floor chandelier made for the Queen, also by F. and C. Osler of Birmingham; the 'Anglo-Venetian' table glass of Apsley Pellatt; the 'elegant wine-glasses with delicately devised stems' of George Bacchus and Sons of Birmingham; the ruby and coloured casings and the cut ruby casings of Bacchus, and Harris, Rice and Co. and Davis Greathead and Green of Birmingham and Stourbridge respectively. In such glass the work and the quality are impeccable. Lingering dislike of Exhibition glass has nothing to do with the art of the Victorian glassmaker, as good an art, if you grant its premises,



(a) *Lamp (made for a shade), thick yellowish-green glass with spiral ribbon (full of water). Designed by Barnaby Powell. Made by Messrs. James Powell & Sons (Whitefriars) Ltd., of Wealdstone. H. $14\frac{1}{2}$ ". By courtesy of the firm. S*



(b) *Dish, cut glass, scalloped rim. English or Irish; c. 1760-90. Diam. 17". Walter Harding Loan V. and A. Mus. See p. 200*

as any in the seventeenth and eighteenth centuries. The dislike is a difference concerning what you want to do; and often a goat-like butting at the creed of another age.

The Albertians wanted to act greatly, and succeeded. It was a perfectly good adverb. The fountain weighed four tons, the 'Alhambra' chandelier was twenty-four feet high, the Queen's chandelier stood eight feet and six inches. Paxton's monument is the greatest work of glass that we possess, and unequalled as an architectural use of the material. In the covered ruby vases of Mrs. Applewhaite-Abbott's collection and in the best of the ruby services the sense of greatness is perfectly translated to the scale of a drawing-room or a dining-table.

The Catalogue of the Exhibition, in three volumes, is too heavy to carry and begins with the words 'The Earth is the Lord's. . . .' The compilers meant that God was a manufacturer and man the Lord of the Earth. By collection and emulation they wished to present a spectacle of human greatness. Where the rococo tradesmen made and sold their goods for 'curiosity' and 'fashion', the sales-appeal of the Exhibitors was in 'the higher regions of taste' and a 'subdued grandeur of ornamentation'. 'Alhambra', 'Grecian', 'Etruscan', 'Egyptian', 'Venetian', 'Bohemian', were not unworthy successors of 'Italian', 'Turkish', 'Tartar', 'Indian', and 'Chinese', and unlike anything but the Albertians who made them. The following are typical notices:

Davis Greathead and Green: vases, jars for scent and flowers in Egyptian, Grecian and Etruscan styles, some cut coated gilt painted in enamel colours with figured ornaments flowers landscapes, and marine views in colours; ruby, oriental blue, chrysophrase, turquoise, black, rose, opal coated blue,

cornelian, opal frosted, pearl opal, mazarine blue; liqueur bottles ruby blue and green coated on flint; ruby and opal lamp pillars cut enamelled and gilt.

W. H. P. Richardson, Stourbridge: cut crystal; opal vases painted with enamel colours (Ulysses weeping at the song of Demodocus, the Judgment of Paris, Diomedes throwing his spear at Mars, the Dream of Penelope, Aesop's Fables, etc.); opal glass ornamented with Pet Fawn in enamel colours; and Grecian figures in coloured enamels.

Harris, Rice and Co., Islington Glass Works, Birmingham: coloured glass cased in flint and enamel or other colours, coloured glass cased, cut enamelled engraved and gilt; ruby and purple.

J. G. Green, 19, St. James's Street, sold: engraved glass in the Greek, Francois I, Etruscan styles; flowered figures and formal engraving; Alhambra ornaments; thistle pattern (engraved) service.

G. Bacchus and Sons, Birmingham: stand with vase and cornucopia; vase, cased enamel on ruby; decanter threaded and engraved; tazza, spiral stem; sugar basin and butter dish, cased enamel on green, with gold leafage; card dish, cased blue on flint, cut in diamond panels; vase cased ruby and white, cut and engraved, cased enamel on flint cut and engraved; champagne decanter, cased ruby on flint, cut and engraved.

Relics of 1851 and of most of the earlier styles which I have mentioned were made at London, Gateshead, Birmingham, and elsewhere until the end of the nineteenth century. But a new period in glassmaking began eight years after the Exhibition, when William Morris and his

followers made the first contribution to domestic-and-fancy design. They resembled the Albertians in an admiration of remote epochs, but they did not wish to be great. They believed in handicraft and they took a more austere view of technical fidelity than the commercial artists of Alexandria in the third century or of Murano in the sixteenth. Even in the 1860's the most urgent need in the domestic-and-fancy trade was a study of mechanical processes in relation to shape and surface quality. By the terms of their creed the Morris men were unaware that such a need existed. They overlooked the pressed houses of Yorkshire and the North. The American bottle-machine came in their time, but not into their ken.

Their designs for glasses began with two ideas and ordinary incompetence. In 1859 Philip Webb, an architect employed by Morris, designed some table glasses which were made by James Powell and Son of Whitefriars. Other designs followed in the 'sixties. Even if one takes Webb according to the Morris creed, he completely ignored the effects obtainable from the heavy viscous lead metal on which every English gaffer had been trained; and the gaffers in '59 could be as good as ever when they had the chance. The designs were of two types, wine-glasses and variations on the Northern beaker theme. The beaker is not a difficult subject and Webb produced some pleasant shapes, a bedroom tumbler with a wave, a slim cylinder, and a waisted beaker. In his stemmed models he produced one admirable bowl, a funnel successively waved, but spoiled it by the other parts of the glass. For the rest he followed the 'Anglo-Venetian' of 'unenlightened' people like Bacchus; and did it worse. The funnel model and the stuck-shank models of '59 exhibit the primary error of wine-glass design—meanness of stem. It does not matter whether you are working flint code or thin code; but

according to the code the stem must tell. A wine-glass has a beginning and a middle and an end, and the greatest of these is the middle. Webb was an external man intruding on a trade which knew its own job.

The two highbrow ideas were: first, that glass is made soft and should look soft, not hard like natural crystal; and second, that when glass is blown, you must get your design out of inflational play. These ideas were fundamental. When they passed to men who understood how to carry them into effect they fixed the tendency of English design for sixty years. They mark the rise of the house of Powell. In 1874 T. G. Jackson, also an architect, designed a set of table glasses for manufacture by Powell's. These vessels show a marked advance on any work done by Webb. The decanter has its volume set low and is a movement of curves. In the claret and the champagne the tall stem sets the design and the curves of the bowl rise out of it. Jackson had been more willing to learn from the manufacturer.

In 1880 Powell's began to make their famous poppy-head decanters, all inflational shapes with a curving volume set low and blown thin. One of these earliest types was a three-corner taper shape with concavity grip, while another made good use of the long-forgotten neck spiral. Some twenty years later a lovely flask shape was fitted with confronting scroll handles of silver, the result of overwarming claret in the decanter and cracking the glass handles. Perhaps Powell's masterpiece was a wavy tapering decanter with an undulating neck and a hollow blown stopper. I have not seen a glass which surpasses this one in the peculiar beauty of blown form. During the period 1880-1914 Powell's wine-glasses show the same tendency to thin metal and inflational 'give'. It may be that some of the earlier models (1880) are a little tripartite, and not quite free from Venetian convention. Of the firm's later work one wine-

glass at least seems to stand out as a classic of design for blowing—the straw-stem model with a wavy ogee bowl. Many other shapes designed and blown by the firm—some are still obtainable at 100 Wigmore Street—made the period 1875–1914 one of the most distinguished in our glass history. Whitefriars was the Morris movement done into glass, not by Morris men, but by manufacturers of tradition and enterprise who understood their own job. It was not in the least ‘Morris’. In this respect it stands with the rehabilitation of commercial printing as the happiest consequence of Morris’s work.

This preoccupation with glassmanship has made Powell’s responsive to successive changes of fashion and gives their work a grace and dignity unique in European glass.

In recent discussions of industrial art a distinction has been drawn between a machine and a tool. It is said that a machine is started by a man, but works automatically; whereas a tool is empowered and controlled by a man throughout the whole of its operation. Then comes the implication that industrial art in the past was a tool matter, but that now it is a machine matter. It is hardly necessary to remark that the distinction is entirely abstract and that tools and machines only differ in degree. A plough and a potter’s wheel are the instances usually cited. The abstraction would not matter very much if it were not made the cover for other factitious contrasts. Thus tool work is said to be free, while machine work is determined; on the contrary, glass-makers have always worked to some form of sales specification. In the same way each work of a tool man is supposed to be unique, whereas a machine produces a large number of identities. But moulding in the glass industry is considerably older than printing and engraving, and the production of identities has been one of its chief uses. Again,

it is suggested that the tool man invents a design during the making of his object 'in response to the material', whereas in machine work the invention is premeditated. Except in occasional *jeux de verrier* the invention has always been premeditated in commercial glassmanship.

In the last phase of the machine-tool heresy plainness is mysteriously connected with mechanical production while ornament is reserved, after Morris, for tool men. It is easier to make a mould for a glass vessel without ornament, and in certain kinds of receptacle ornament is unnecessary and uneconomic. It is also easier not to carve a chair-back or not to paint a pot. Plainness is not a process fact, but a taste fact; some of the best work of the seventeenth and eighteenth centuries is based on the transmission of ornament with process modifications. The quantity of bad ornament which sells in every department store proves nothing about plainness. It shows that after thirteen centuries of English art we are still an ornamental people, but ill served at the present 'primitive' stage of mechanical production. The *relevance*¹ of ornament in glass depends on and varies with three factors: (1) The duration or life of the vessel; if you look at something long you need something to look at. (2) The obtrusiveness of the vessel in relation to sense stimulation at the time of use; in this respect dining services come first, then toilet glasses and containers of branded toilet preparations, then food containers brought to table. (3) The appeal value of the container as a sales asset for branded goods; design in industry is bound to be a fad unless it is economically endowed in this way.

Mr. K. L. Graham of the Wood Bros. Glass Co. Ltd., Barnsley, is one of the first English designers who have studied and successfully used the nature of mechanical

¹ Throughout, the relevance of ornament to form is taken for granted.

shape and ornament in glass containers of toilet goods. In his admirable *Dissertation on Glass Container Design*¹ Mr. Graham has set out the necessities and the opportunities of his profession. One wishes that his paper could be reprinted in a collection of statements by inside designers. Such a collection would be of greater public advantage than albums of old-and-new, bad-and-good photographs which exhibit the taste of the moment, but rarely touch on fundamentals. The necessities arising in manufacture are economic metal, workability of metal, the nature of the process used, ease and cheapness of production. To these the buyer's requisition adds filling strength, exact capacity, the suitability of shape and colour to the nature and appearance of a particular branded product (this scent or that firm with such and such a class of public). The designer's business is to arrange these needs in a manner attractive to the eye and conducive to sale. His own margin covers profile, process ornament, adventitious ornament, and choice of closure (glass, metal, composition) suited to the nature of the product and the form of its container. To these one may add colour, lay-out, and typography of the descriptive label, if there is one. The aims of container design could not be described better than 'dainty, bright, and unusual'. Containers are the *galanteries* of the present time and their opportunities are greater because more people use them. Further development depends on two points which Mr. Graham makes thus:

- (1) The only suitable method of approach to glassware designing is the student's personal contact with a glassworks as well as a careful study of the various processes and limitations of glass. This study should be supplemented by a series of lectures

¹ S.G.T. xviii, 1934, pp. 112-21.

in pure design relating to glass practices, including marketing.

- (2) The designer is often intimidated by the engineers and so-called 'practical men' who invariably let the inexperienced designer know what 'cannot' be done. The experienced designer knows what 'must' be done, and this is the type needed in the glass industry.

The present writer is one of those who believe that each industry should nurse its own designers and that inside men who have the opportunity and desire to go outside do better work than butterfly designers with a smattering of several trades. Mr. Barnaby Powell seems to me an unanswerable argument.

In bottle design for wines, beers, spirits, milk, soda water, preserves, sauces, sweetmeats, and branded foods of all kinds, the designer's margin is at present more restricted. In some types of bottle the designer stands between the engineer of filling or packing machinery used by the product manufacturer and the engineer of bottle machinery used by the glass manufacturer. On the first count the height and profile of a bottle are defined within a narrow margin by the appropriate members of machines used for conveying, washing, filling, covering, and labelling. On the second count, nearly all bottles are now made by machinery which uses, singly and in combination, the three primary methods of hollowing glass: blowing (*i.e.* pneumatic blowing), suction, and pressure. I take the following points from a paper on *The Design of Glass Bottles*¹ in which Mr. Edward Meigh describes very clearly the factors of necessity and advantage in bottle design:

¹ *S.G.T* xviii, 1934, p. 122-7.

(1) Can the shape (*a*) take the paraison mould, (*b*) be transferred to the blow mould, (*c*) be delivered from the mould?

(2) The best shapes are those of circular plan, cylinders or round shapes running to curved profiles. Squares, angles, and ovals are difficult in the machine, and do not cool uniformly.

(3) The placing of ornament and lettering depends on the facility for 'blowing up' in certain areas of the bottle.

(4) The business of ornament is to use process facts (*e.g.* the collar required in Blow feeder-fed machine bottles), or to cover process faults (*e.g.* valve mark in press-and-blow bottles and sheer scar in suctional bottles). Defective distribution of the mass of the metal in a bottle can be worked into decorative pattern.

Some glass bottles, as Mr. Meigh says, design themselves. I am not sure that they are any worse for that. Modern British bottles present, on the whole, a high standard of visual appeal so far as shape is concerned. Some of them are good examples of 'natural' machine form and may be compared, on their own ground, with the process values of blown Syrian glass or thrown T'ang pottery. No one will suggest that in either kind of process, process-value is everything. But quite a number of grocer's bottles now on the market could be converted from utensils into utensils of elegance by a slight change in their proportions. This change can only be made, and ought only to be made, as a sales asset in the make-up of competitive branded products for table presentation. There are already signs that appeal make-up of branded foods is following closely on the example of the perfumery and toilet trades. Foods, like perfumes, are bought largely by women. As this demand travels back to the bottle designer and thence to the engineers of packing and bottle-making machinery,

great developments may be expected. Except on this economic basis there is no room for artistic design in the bottle industry.

The past fifteen years have witnessed several interesting developments in the design of what is happily called 'domestic-and-fancy glass'. There is already ample material for an anthology of contemporary British work, and I can only notice one or two of the main tendencies. Modern illumination glass of all kinds bids fair to equal, in its own way, the stained glass and mosaic of the past, but unfortunately it is outside the scope of this book. Under the head of mechanical process, fire-proof glasses are perhaps the most interesting of modern productions. The famous Pyrex glass is made by Messrs. James Jobling and Co., Ltd., of the Wear Glass Works, Sunderland, and of Charterhouse Street, E.C.1, by a high-temperature process of American origin. Open and covered bowls and dishes in this material allow food to be served in the vessels in which it has been cooked. The shapes are a good example of 'inside' design and possess mechanical beauty of a high order. They show a marked preference for elegant oval forms, a reminiscence of Adam glass, but they have no suggestion of period. The tone of the metal illustrates the fact that glass can be agreeable without being bright, but the surface, to my fingers, has an unpleasantly 'greasy' quality. More recently Messrs. Chance Bros. and Co. Ltd. of Smethwick, Birmingham, and 10 Princes Street, S.W.1, put on the market a similar oven-table ware of lighter tone and pleasanter surface than its predecessor. The shapes were designed by Mr. Harold Stabler of Carter, Stabler and Adams, whose pottery and silver designs are well known. They are notable for squareness of plan and a panelled treatment, suggestive of silver but not inappropriate to

this kind of ware. Orlak is no longer on the market and the limited issue should appreciate among collectors. Much pressed glassware for table use and toilet purposes (retail) still adheres to the less successful shapes of the last century and to decoration in imitation of 'crystal' cutting. But several manufacturers, notably Messrs. Bagley and Co. Ltd., bottle manufacturers of Knottingley (Yorks.) and United Glass Bottle Manufacturers, Ltd., of St Helens (Lancs.) and 40-43 Norfolk Street, W.C.2, have made a welcome beginning with inexpensive pressed table ware of good form and appropriate process ornament. The familiar squat tumbler, waisted and broadly fluted towards the base, is an instance of what may be done in glasses costing a few pence. Half tumbler, half romer, as good for half-pints as for cocktail sizes, this glass is, from every point of view, one of the best shapes now on the market.

Since Powell's moved from Whitefriars to Wealdstone a fresh order of design has appeared in iron-blown and manipulated glass. I venture to think that it is the most fertile influence in modern glassmaking. Perhaps one may describe it as impressionism. It derives partly from recent work of the Swedish factories, particularly the undecorated green glass of Eda and Orrefors. Its other parent is the genius of the late H. J. Powell. Under Mr. Powell's influence the firm made a study of Northern glassmanship from Dutch, Flemish, and German pictures, from fragments found on English *Waldglas* sites (fourteenth-seventeenth centuries), and from extant glasses. This study produced some attractive reproductions, but it was never pursued in a period spirit. It was a search for fundamentals: glassy ways of doing things. The first-fruits of this contact are making Wealdstone as great a name as Whitefriars.

Impressionism picks up the aesthetics of Northern glassmanship at the point where the *Waldglas* tradition was prematurely interrupted, at the end of the seventeenth century, by lack of technical resource and by the rise of crystal. To-day we are less sure of crystal and we have the resource, both in improvements of manual process and in astonishing command of translucent tone colours, including many besides the greens. At present the chief agents of appeal in impressionistic glass are as follows: (1) Conservation of shadow effects by making the mass thick in relation to the size and profile of the vessel. (2) Sheen surfaces obtained by fire polish. (3) Graduation of mass from base to rim for shadow effect or for grading off a translucent tone colour; Mr. Barnaby Powell is a master of this kind of design. (4) Variation of mass, *e.g.* wave-length effects obtained by inflational expansion consequent on the pillar-mould. (5) Splash-effects, tone on related or contrasted tone, as in some glass by Moncrieff's of Perth. (6) Linear movement obtained by trailed thread-work; this has been happily used, *e.g.* by Mr. Barnaby Powell in his well-known 'ribbon lamp' (Pl. XXIII*a*) and by Messrs. Stevens and Williams in a toilet set designed by Mr. Keith Murray. (7) Gathering of tone colour obtained by drop-on motives, *e.g.* Powell's recent 'comet' vases. (8) Wavy rims and profiles. (9) Exploration of beaker form in drinking-glasses with a regard for beers and ales (of various kinds) and cider, and in flower vases with a regard for the cut length, spread, colour, and scent of particular flowers. (10) Exploration of the two-piece semi-beaker for light wines, light ales, and cider. There is no law that all wine-glasses must be stemmed.

These things are easy to do badly. 'Frugality' taste has produced a crop of glasses which imitate the defects of *Waldglas* instead of developing it with the means now

available; and there are opportunities for improvement of tone colours, on which everything depends. As manufacturers of impressionistic glass Powell's are in a class by themselves. The designs of Mr. Barnaby Powell and Mr. James Hogan are an interesting contrast of two quite different minds thinking in terms of glass, Mr. Hogan piquant and experimental, Mr. Barnaby Powell grave and glassy. Glass of this kind is the counterpart of English water-colour.

In the matter of cutting, the creed of Whitefriars was admirably stated by H. J. Powell in 1923: 'a system of lightly breaking the surface to dispel monotony and obtain flecks of brilliancy . . . without obscuring or cloaking the form given by the glass blower's breath'. This was the aesthetic of 'Flaminian' cutting in Roman times and of Syrian and Mesopotamian work of the kind found on the ninth-century site of Samarra (Tigris). It was the basis of London shop-cutting in the time of Akerman and Betts (1720-70). More recently the researches of Mr. Francis Buckley and the designs of Mr. Keith Murray for Messrs. Stevens and Williams have done well in reminding Stourbridge of what is fundamental in its own tradition. Messrs. Walsh Walsh Ltd. of Soho, Birmingham, and 4 Holborn Circus, Messrs. Webb and Sons of Stourbridge and 26 Hatton Garden, and Messrs. Webb and Corbett of Stourbridge and 18 Charterhouse Street, have shown an interesting response in this direction. It may be that fleck designs are best suited to slight glasses where the values of shape are inflational. There are certainly other bases for cutting. When a glass is of crystal thickness or when a glass is formed by a mould process before it is cut, broad panels (radial, lateral, oblique, polygonal) are capable of good effects, as several British firms have shown. Vertical and spiral fluting and channeling have been

admirably used by Mr. Keith Murray for Stevens and Williams and by Mr. Graham Sutherland for Stuart's. The scooped baroque figures of Gate and the rococo gaiety of Hald (both of Orrefors) are perhaps too mannered to prove fertile in England. Variations on the theme 'Dance Little Lady', done in slice and snick, have already danced too long. We have not yet recovered the satisfaction in being human which is necessary to human figured ornament. The opportunities lie rather in process patterns built up from the different degrees of polish and the different surface values obtainable from the cutting wheels and from acid work and sandblast. Some modern textiles have done well with pattern conceived in terms of fabric surface. In designs for mirrors and panels Mr. Raymond McGrath and others have shown the possibilities of glyptic surfaces, and 'cut glass' may have much to learn from them.

The machine-tool fallacy has had the effect of dividing industrial artists into two camps, machine sentimentalists and tool fanatics, as if there were two facts instead of one. There is a similar split between commercial art and art which is not commercial (whatever that may be). But the forces which determine design in the industrial arts remain to-day what they have been in trading societies of the past. They are process, saleability, and invention. So far as manufacture goes the one fact is the fact of process. By process I understand the nature of the material, the apparatus used, and the routine of factory production. Process in this sense has been with us since industrial art began, and as varieties of process Powell's gaffers and bottle machinery make an equivalent demand on the anticipation and invention of a glass designer. A common mistake among outside men—though I am an outside man who say it—is stated thus by a distinguished art critic: 'The artist has only to design the original stamp, invent the woven pattern, cal-

culate the profile of a vase; and the rest follows mechanically'.¹ Is there, then, no difference between dry-point and mezzotint? In the glass industry from Tel-el-Amarna to U.G.B. 'the rest', meaning process, has always led. No gaffer can give you such superb precision of curve as the shoulder and neck and collar of a modern wine-bottle. No machine has the 'give' of a gaffer's profile. Process, of whatever kind, makes the chief contribution to the appearance of a finished article and must always be the first study of a glass designer.

About twenty years ago a group of people who were interested in the appearance of things formed the Design and Industries Association. The D.I.A. was a body of reaction and it is a little liable to confusion of thought. But it has done historic work in bringing the artistic opportunities of machine processes into general recognition. It may be that saleability is the next hurdle to be taken. The prestige of graphic painting has stressed the authorship rather than the conditioning of industrial art, and much time has been wasted in throwing light upon obscure artists of the past. It still takes two to make a finished article, as it did in the industrial art of Roman and Renaissance times and in the exchanges of Western and Far Eastern art in the seventeenth and eighteenth centuries. A finished article is poorer in artistic content as it fails to incorporate a customer's taste. That incorporation is made possible when articles are made, not only to sell, but in anticipation of sale. In that respect the Prince of Wales has been one of the wisest critics of design in industry. Yet the belief is still held that articles made to sell are thereby inferior as objects of art. Woolworth-sold glasses are bought on their merits, but they are still mentioned with an apology.

If relevant cheapness is assumed, saleability may be

¹ Mr. Roger Hinks in *The Criterion*, xiii, 1933, p. 125.

divided into three factors. First, in bottles and containers, the distribution needs of packing, filling, covering, storage, transport, description, as members of an appeal make-up related to product (saucy sauce bottle) and to sectional markets. Appeal make-up is less developed than advertising art. Second, in glass articles bought direct for their own sake, a study and sectional grouping of social regards. By social regards I mean the ideas and conventions of different social groups ('Mrs. Smith'). Such groups rarely buy design. They buy conformity with a slice of life. Such slices are equally valuable as the content of industrial art. To some extent clientèle is an automatic slice classification, but 'slice' design in this country is capable of much greater development and of artistically valuable results. Third, convenience. Under various popular names ('fitness', 'serviceability') this factor has been confused with process determinations, whence the use of 'functional' in an ambiguous sense. It is also confused with plainness, with which it has no necessary connection. Glass gives little scope for domestic contrivances which become a nuisance in a week, and table sets at any rate are *chosen* primarily as table decorations. Certain rules of convenience are not difficult to observe: balance in the hand, especially in a stemmed glass, pouring balance at all levels of fullness in decanters, stability on the table, clean pour, stable stoppers, and so on. They are the result of manufacturing experience and are more evident in good Victorian glass (past and present) than in some of the recent designs which have not yet had time to mature. Specialisation to drinks is perhaps a rather neglected opportunity. The large cover of glasses of the last century has generally dwindled, and for that reason design for vintage moods is much needed.¹ A

¹ In most modern covers the constituent glasses are uniform except in size and capacity. Their contents require them to vary in mass at the lip and in mass

designer has at least something to work on if he is distinguishing, say, a white-Burgundy glass from a still Rhenish glass. The Food and Wine Society could take a useful lead in this matter. In the same way for domestic use it is still difficult to obtain good-looking tankards and beakers with a regard for draught beer, and for the increased consumption of lager beers, light ales, and cider in flagon or on draught. The ordinary 'half' tumbler has to do duty for several uses where specialisation would stimulate design, and the possibilities of the beaker (the earliest and most English of glasses) are known only by Powell's Woodchester types and by a few *brasserie* glasses.

Mr. Roger Hinks recently observed that art is not only the making of things, it is also the inventing of things. I think that invention is a more valuable idea than 'art in industry'. It is a more balanced idea. Art in industry is liable to be treated as a fad, an extra, an expensive line. This is fatal. The invention of a glass consists in assembling and co-ordinating a large number of ingredient factors, of which the appearance of the article is one. If considerations of appearance are allowed to encroach unduly on process and saleability, the result is bad art as well as bad industry.

When much has been done for technical education in other trades, glass has been left out. Other countries have institutes of glassmanship and have done well with them. We have none. Small schools with a particular reference exist at Wordsley and at Brierley Hill, but it has been left to an enterprising 'outsider' to take the next step. In 1933 Mr. Baylis Allen, Principal of the Bromley School

colour. Light and delicate wines need a thin-blown bowl, while clarets and burgundies can often carry mass. It is difficult to get wine-glasses in tone colour related to vintage colour, or glasses which grade off from a good tone-colour stem to a tintless or almost tintless bowl. Different wines also require quite different orders of form. A cover in four or five colours is almost unknown.

of Art, started a course in blowing and manipulation with Mr. James Manning, gaffer, in charge of the work. A small electric furnace is used and gives good results in wholesome conditions. It is doubtful whether such an enterprise can produce a race of gaffers to make good the growing scarcity of older men. It catches its pupils several years after the true age of apprenticeship (9-10). But for those who intend to design or manage or sell glass it provides an acquaintance with the nature of molten metal and with the fundamentals of one kind of process. This is a good thing, but it is not enough. We need an institute of glass design on a broader basis, where future designers and buyers can study the other varieties of formative process; the opportunities inherent in glass machinery as it is and as it may become; the decorative processes of brilliant cutting, engraving, acid work, and sandblast; the factors of distribution and saleability; contacts with other arts; and the taste of sectional markets; as these things are related to one another and to the appearance of the finished article. London, Birmingham, Edinburgh may lay claim to such an institution, but the first place for it is Sheffield. Here, in the Department of Glass Technology of the University, Professor W. E. S. Turner has created a research body of world reputation in the physics, chemistry, and mechanics of glass manufacture. The future of artistic glass depends on Sheffield bricks. And it is the scientists themselves who have made a move, suggesting that they would welcome an ally to study the same phenomena from a different angle.

NOTE FOR PRIVATE COLLECTORS

THE present writer is not a collector and adds this note only by request.

Seine-Rhine glass cannot usually be collected, and perhaps none of it should be in private possession. It should be treated like treasure trove. Syrian glasses found in the Eastern Mediterranean basin may be had on the market, but cases are known where the names of famous British or Seine-Rhine find-spots have been ingeniously attached to them. By English law glass found in England is the property of the owner of the land where it is found. Some landowners have no sense of glass and can be induced to part with finds to an enterprising collector who gets there before the swooping academic excavator. Workmen on industrial excavations can sometimes be bribed. Cases of Seine-Rhine forgery are known, but they are very rare.

Mediaeval glass can be collected in the form of fragments, and these are important. On some of the Wealden sites fragments can be had by poking about in the woods with a stick, and they may also be found in industrial excavations in the older parts of London and other mediaeval cities. The collection of fragments is a fascinating pursuit; they often have more to say of process and design than entire vessels, and no collection is complete without its quota. Apothecaries' phials are fairly abundant and include some very pretty shapes. They are well worth collecting. So are hour-glasses, but they are rather scarce. There are good opportunities in collecting baroque glass other than

lead crystal (*façon de Venise*), especially when it conforms to what we know of Mansell's production and Greene's earlier designs. Some of it was probably made by the gaffers of the monopolists, and in any case it represents English taste in late Tudor and early Jacobean times.

Most of the best lead crystal is now on the market. It is in the hands of a small group of well-known glass dealers in London and the provinces who have combed the country pretty thoroughly. Collectors form their collections from this source. When they die their glasses are bought again by the dealers. And so it goes on. Collectors who visit these dealers will enjoy a fair deal, a long experience and a wide selection of eighteenth-century glasses. There also exists a well-known private glass consultant who possesses great knowledge and a sympathetic understanding of different kinds of taste. He is prepared to advise collectors and can usually obtain their desire. The present is a favourable time to begin the formation of a collection, since prices have fallen greatly since the boom of 1920-25. A first-class baluster should be obtainable for about £10 and attractive smaller glasses can be had for £2 or £3. Pairs of anything (especially rococo decanters with original stoppers), sets, sweetmeats, candlesticks, rare types of mixed twist, rare combinations of any kind, cut glass of the Irish type—all these are more expensive. Commemorative engraving often fetches fancy prices, as much as £50 to £80 for some types. Ceiling chandeliers and Verzelini and Raven glasses (when they fall in) may be reckoned in hundreds.

It is still possible to 'pick up' eighteenth- and early nineteenth-century glasses at country sales and in small shops—'junk shops' in mean streets are better than 'antique shops'. But at the present time the great opportunity for the 'small collector' is a judicious sifting

of Victorian glass. It is no use doing this in an eighteenth-century or a twentieth-century mood; one must feel and judge by Victorian standards. There is very good Victorian glass. Prices are rising, but they are not yet high, and imitation is still undeveloped.

For those who have difficulty in distinguishing eighteenth-century from modern metal it is a good plan to spend two or three hours in one of the glass dealers' shops, allowing the metal to soak into the eyes and fingers, and then repeating the process *the same day* in the British and other glass showrooms in the Holborn Circus area. If a museum is used, one should insist on having about twenty glasses laid out on a table in a good light, so that they may be handled intimately. Curators exist for this purpose; it is no use looking at glasses behind glass. Mistakes are often made from an insufficient acquaintance with modern metals, and in some quarters of London the antique shops are almost as good as Holborn Circus for learning modern metals. In a general sense it is true that modern metal is more finished and whiter in tone. The presence of 'stone' is a good guide, and tone, bubbles, surface, striations, unevenness may be helpful, but have been imitated. 'Irish' glass was made in English, German, French, and Czech factories throughout the last century and is still made. Here it is better to look for what is 'good' than for what is 'right'. Some of this later glass in the 'Irish' style has a sallow yellowish cast or a 'celluloid' surface, or both.

For the study of glassmanship it is useful to try to see every glass as an action rather than a thing; to spend several hours watching different kinds of work in an English domestic-and-fancy glasshouse and in a pressed glasshouse; and to do the same at Murano, avoiding the factitious displays of blowing in Venice itself. Some of the habits of the eighteenth-century gaffers can be learned in

this way, and also some of the tricks most easily reproduced. 'Good' wear marks are in the form of minute scratches on bases and rims; 'bad' wear marks are abraded with emery. Punty-marks, or the lack of them, are so easily reproduced that they are not alone a good guide. Relative weight may be helpful in certain cases. Ring is not always reliable.

Eighteenth-century designs, taken from Greene or from published and exhibited glasses, have been reproduced in large numbers. The great majority of them are wrong in some detail of shape, but a few scientific copies have been made for period purposes. There is no short cut to the detection of imitations. It depends on a constant handling not only of lead crystal, but of French, German, Venetian, and Netherlands crystals made in the eighteenth century, and of nineteenth-century and contemporary glass.

Chandeliers and some candlesticks are liable, like old houses, to have a modern wing. Some chandeliers are a history of glass during 150 years, and in some cases the additions are correct period. More often festoons are incorrectly hung, and French or modern acid-cut drops are used to make up. All commemorative engraving wants watching. Old drinking-glasses are sometimes engraved with false commemorative work, but the imitation of flowered engraving is less frequent and more obvious. Some imitation engraving is rougher and whiter than eighteenth-century engraving. Plain glasses of the late eighteenth and early nineteenth century sometimes bear later cutting, *e.g.* 'high-class' cutting on a tavern glass. Such imitated cutting is sometimes very low in gradient.

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THE following is a list of books, periodicals, and compendia mentioned or quoted in this book, with the abbreviations used. Some items contain only a little information concerning glass, while other works, used considerably, have not been quoted. The latter part of the book has not been fully documented, because the ground has been ploughed over frequently. It has been impossible to list the periodical literature or the principal sources or general archaeological and historical books which contain a little about glass.

Items marked with an asterisk may be regarded as a short bibliography related to the scope of this book. The best English book on glass in general is DILLON. Often Dillon does not give chapter and verse for his statements, but wherever I have run him to earth I have found him accurate and sensible. Though not connected with the trade and weak on a few matters like the *magnes lapis* question, he had a real understanding of this peculiar, migrant, international, father-and-son industry. But his book is nearly thirty years old and on many matters of fact it has been superseded in their several spheres by F. Buckley, Fremersdorf, Harden, Kisa, Morin-Jean, Pazaurek, Rademacher, Schmidt, and others.

There is no English book on the glass industry in antiquity, or on the Seine-Rhine glass industry, or on the Seine-Rhine and other ancient glass found in Roman Britain and Anglo-Saxon England. The best substitutes are MORIN-JEAN and KISA. The former is chiefly confined to glass found in France; and as the author himself remarks, the area France and the Roman period are equally artificial so far as the glass industry is concerned. It is a little 'classical' in bias, clear-headed, sensitive to design and understanding of the industry. The book is admirably illustrated with outline drawings done by the author from the life. KISA died over his proof-sheets. His three-volume book contains nearly 1000 closely printed pages and is the most complete compendium of ancient glass that has appeared. It is painstaking, confused in arrangement, innocent of cross references from illustration (in one volume) to description (in another), and badly indexed. Though it embodies some brilliant work, especially on the Syrian and Alexandrian 'sides', it is weak on French and English sources and on later Seine-Rhine glass, and not always reliable on process. It also lacks a feeling

for development and contact, and gives the impression that the industries of antiquity existed in order to give archaeologists something to do. In some respects Kisa's earlier work on the Vom Rath Collection is a better book.

The mediaeval glass industry is noticed by DILLON, HARTSHORNE, SALZMAN, and other general writers. The processes have been described by J. A. KNOWLES, but no book covers the whole field. The *Victoria County History of Surrey* contains a good account of the Wealden industry, largely based on the investigations of the Rev. T. S. Cooper, of Chiddingfold. WINBOLT adds some valuable new material and describes the author's recent excavations on Wealden glasshouse sites. The identifications are not always fully substantiated. PAPE is the discoverer of the Lorraine industry in North Staffordshire (about 1600) and describes the glasshouse, siege-pots, and glass found in Blore Park. References for Buckholt and Woodchester are given on pp. 88-89. RADEMACHER is exceedingly valuable from a collateral point of view, but does not treat the North European glass industry as an international whole.

The great work of HARTSHORNE covers the whole period from Roman times to the beginning of the nineteenth century. Much of the text has been superseded, but the glasses illustrated and the collection of literary sources will always be valuable. Hartshorne's treatment of Sloane 857 is not very satisfactory, and there are sources he missed as well as material from State Papers published since his day. NESBITT's works may be useful, but now need to be read with circumspection. POWELL did not add much to Hartshorne, but is the only book to deal at all fully with the interesting developments of the nineteenth century and the great firm to which the author belonged.

FRANCIS BUCKLEY (1925) and WESTROPP (1920) marked a new period in English glass studies. The former's *History of Old English Glass* deals with lead crystal and is based on a profound knowledge of newspaper advertising in the eighteenth century as well as on long collecting experience. Mr. Buckley's contributions to *Glass* and *S.G.T.* should always be read. His most important work (not fully developed in his *History*) is perhaps his discovery of the London shop-cutters (p. 208 sq.). WESTROPP is the only authoritative book on the Irish factories. The works of the late WILFRED BUCKLEY (no relation to FRANCIS BUCKLEY) only touch on English glass incidentally. The present writer's *History of English and Irish Glass* (1929) illustrates some 500 glasses and contains a full but incomplete bibliography. Several handbooks for collectors, based on Hartshorne, and good in their day, now tend to perpetuate pre-Buckley ideas. PERCIVAL (1918) does this less than the others.

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THE PRINCIPAL BRITISH MUSEUMS FOR GLASS

PRIVATE collections, for those who have access to them, often give better opportunities for studying glass than do public collections. The five leading museums for glass in this country are the British Museum (where much of the best Seine-Rhine glass is in the Department of British and Mediaeval Antiquities, the main collection being in Mr. R. L. Hobson's department); the Victoria and Albert Museum; the Royal Scottish Museum, Edinburgh (in conjunction with the National Museum of Antiquities); the National Museum of Antiquities, Dublin; and the Fitzwilliam Museum, Cambridge (used in conjunction with the University Museum of Archaeology and Ethnology). Oxford (Ashmolean) has very good Syrian glass from the East, good English bottles, a little Seine-Rhine; but is very weak on other kinds. German *Waldglas* is poorly represented in nearly all English Museums; but the British Museum has good examples and Guildhall many fragments. From a glass point of view it is perhaps a pity that in many centres glass of so-called archaeological periods is exhibited in different museums or departments from glass of so-called artistic periods, and that the one field is worked by different 'trade unions'.

The following is a list of other museums for glass, but makes no pretension to completeness:

AYLESBURY (BUCKS COUNTY) MUSEUM.

Claw-beaker and other S-R fragments.

BIRMINGHAM ART GALLERY.

Coll. of Murano and other Venetian glass; coll. of lead crystal.

BOURNEMOUTH (RUSSELL-COTES) ART GALLERY.

Lead crystal and other glass.

BRADFORD (BOLLING HALL) MUSEUM.

Lead crystal and other glass, especially of Yorkshire manufacture; also bottles.

BRISTOL MUSEUM AND ART GALLERY.

Local coloured glass (18th-19th cent.); part of Mr. John M. Bacon's coll. of lead crystal destined here.

ENGLISH GLASS

BROMLEY SCHOOL OF ART.

Small, but choice, coll. of Syrian vessels, on loan.

BURY ST. EDMUNDS (MOYSES HALL).

Some from R-B sites and some 18th cent.

BUXTON MUSEUM.

Coll. of lead crystal and English and other coloured glass.

CAERLEON (MON.) LEGIONARY MUSEUM.

Good small coll. from R-B site, incl. common squares, murrine fragments and other fragments mainly of Italian manufacture.

CANTERBURY MUSEUM.

Good examples from R-B and A-S sites. English mediaeval and later fragments.

CARDIFF: NATIONAL MUSEUM OF WALES.

Small coll., mainly fragments from Welsh R-B sites. Some bottles (18th cent.) and silver-mounted lead crystal.

CARISBROOKE CASTLE MUSEUM (I.W.).

S-R fragments from Chessell Down.

CARLISLE MUSEUM.

Several good squares and local fragments from R-B sites.

CHELTENHAM ART GALLERY.

Coll. of Syrian glass (Near East finds).

CHESTER MUSEUM.

Some 17th cent. fragments, probably English.

CHESTERS MUSEUM.

Very good coll., mainly fragments from Wall sites.

CIRENCESTER (CORINIUM) MUSEUM.

Some glass, mainly fragments from R-B site.

COLCHESTER (CASTLE) MUSEUM.

Very good coll. of vessels and fragments from local R-B sites, incl. good Seine-Rhine and pre-Seine-Rhine pieces.

DORCHESTER: COUNTY MUSEUM.

Some fragments from R-B sites.

EXETER: ROYAL ALBERT MEMORIAL MUSEUM.

Good Clarke Bequest of lead crystal. Cf. p. 142.

HISTORICAL MUSEUM.

English bottles (17th-18th cent.).

FARNHAM (DORSET), PITT RIVERS MUSEUM.

Very good coll. of ancient glass from Palestine, Cyprus, Egypt, and elsewhere in the E. Medit. Basin. Find-spots recorded and some fine pieces. A few Seine-Rhine pieces from Amiens, Faversham, etc.

THE PRINCIPAL BRITISH MUSEUMS FOR GLASS

GLASGOW: KELVINGROVE ART GALLERIES AND MUSEUM.

Hamilton Lang Coll. of Syrian glass from Cyprus; Murano and Venetian glass (incl. reproductions of examples in Museo di Murano), Spanish and some German glass, good loan coll. of lead crystal.

PEOPLE'S PALACE MUSEUM.

Part of Hamilton Lang Coll.

HUNTERIAN MUSEUM (UNIV. OF GLASGOW).

Small coll. of ancient glass.

GLOUCESTER MUSEUM.

Vessel fragments and siege-pot fragments from Woodchester glass-house (*fl.* 1600); coll. of ancient glass from Near East; a few lead crystal glasses.

GUILDFORD, CASTLE ARCH (SURREY ARCHAEOLOGICAL SOCIETY'S) MUSEUM.

Cooper coll. of Wealden fragments; part of Winbolt Coll.; two good cone-beakers.

HULL: MORTIMER MUSEUM.

Mediaeval and other fragments from York.

MUNICIPAL MUSEUM.

Some lead crystal.

HORSHAM MUSEUM.

Part of the Winbolt Coll. of Wealden fragments

HOVE MUSEUM and ART GALLERY.

Good small colls. of lead crystal.

IPSWICH: CHRISTCHURCH MANSION.

Good small coll. of mediaeval and other fragments; fine lead crystal bowl.

NATURAL HISTORY MUSEUM.

Several good Seine-Rhine glasses from local site; a few other glasses.

KETTERING MUSEUM.

A few vessels and fragments (Seine-Rhine) from local site.

LEEDS: CITY MUSEUM.

Good small coll. from Lanuvium (Cività Lavinia), mainly fragments and incl. murrines; several good Syrian glasses from Italian and Near East sites.

LEICESTER: CITY MUSEUM.

Good small coll. from local sites, mainly 'common squares'; good British-found fragments; coll. of Syrian vessels from non-British sites.

LETCHWORTH GARDEN CITY MUSEUM.

Good small coll. of common squares from local R-B site.

ENGLISH GLASS

LEWES: BARBICAN HOUSE (SUSSEX A.S.) MUSEUM.

Good Seine-Rhine glass from Alfriston cemetery and some other ancient glass.

LINCOLN: CITY AND COUNTY MUSEUM.

Good examples of common squares (local R-B sites), some lead crystal, and phials.

USHER ART GALLERY.

Ruston Coll. contains some good baroque pieces, mainly N. European *façon-de-Venise* of 17th cent.

LITTLEHAMPTON MUSEUM.

Some glass.

LIVERPOOL PUBLIC MUSEUMS.

Bryan Faussett Coll. of Seine-Rhine glass from S. Brit. sites. Other ancient glass (some S-R), a good coll. Good examples of post-Renaissance European glass incl. German, *façon-de-Venise*, and Bristol.

LONDON: BETHNAL GREEN MUSEUM.

Good coll. of Venetian 19th cent. glass.

BRITISH MUSEUM.

See above.

CUMING MUSEUM (SOUTHWARK).

Syer Cuming Coll. of fragments from London sites (mainly 16th-17th cent.); some lead crystal; murrine fragment from Cumae (No. C.11400).

GUILDHALL MUSEUM.

Finest coll. of fragments in the country, nearly all from London sites and incl. Syrian, murrines, Seine-Rhine, German and English mediaeval, Murano, English-Venetian and lead crystal primitives, much of it not exhibited. Good coll. of common squares and some other glass from R. London. Good coll. of bottles and phials (15th-18th cent.).

LONDON MUSEUM (LANCASTER HOUSE).

Good small coll. of vessels and fragments from R-B sites, incl. common sq. and Flaminian cutting; fine cone-beaker; lead crystal fragments and primitives; a little diam. engr. glass. Also the Garton Coll. of lead crystal, one of the finest private colls. of its kind ever assembled. Good bottles, 17th cent. and earlier.

SCIENCE MUSEUM.

Good process exhibits and reconstructions; Wealden fragments (Winbolt Coll.).

VICTORIA AND ALBERT MUSEUM.

See above.

THE PRINCIPAL BRITISH MUSEUMS FOR GLASS

WALLACE COLLECTION (HERTFORD HOUSE).

Murano and other *façon* glass, few but good.

WOOLWICH BOROUGH MUSEUM.

Good coll. of Syrian glass.

MAIDSTONE: KENT ARCHAEOLOGICAL SOCIETY'S MUSEUM.

Very good small coll. of Seine-Rhine glass from Kent sites.

TOWN MUSEUM.

S-R and other glass from Kent sites; some bottles and other 17th-18th cent. glass.

MANCHESTER: CITY ART GALLERY.

Lloyd Roberts Bequest, incl. good coll. of lead crystal. Also some good examples of S. Lancs. glass of 18th cent.

UNIVERSITY MUSEUM.

Sharp Ogden Coll. and Flinders Petrie finds, incl. Syrian and Egyptian glass and very good examples of Alex. cut crystal (the Hawara vase best of its kind in the country).

MERTHYR TYDFIL (CYFARTHFA CASTLE) ART GALLERY.

Some glass of 18th-19th cent.

NEWARK MUNICIPAL MUSEUM.

A few pieces of glass from R-B sites.

NEWCASTLE-UPON-TYNE: BLACK GATE MUSEUM.

Good small coll. of Seine-Rhine fragments from local sites; some later glass.

LAING ART GALLERY.

Good coll. of Newcastle, Gateshead, and other N. country glass of 18th-19th cent., especially Sowerby. Some good lead crystal, and some phials from London finds (16th-18th cent.). See p. 86.

NEWPORT (MON.) CORPORATION MUSEUM.

Some glass, mainly fragments from local R-B sites. Coll. of lead crystal, some German glass, coll. of 19th-cent. glass (largely coloured).

NORTHAMPTON CENTRAL MUSEUM.

Some important Seine-Rhine fragments from local sites; fragment of Eastern snake-thread (prob. from Egypt); good small coll. of lead crystal, and the famous Northampton serving-bottle.

NORWICH (CASTLE) MUSEUM.

Glass from R-B sites and other glass.

NOTTINGHAM (CASTLE) MUSEUM.

Some glass.

OLDHAM MUNICIPAL ART GALLERY.

Part of F. Buckley Coll. of lead crystal, largely N. country.

ENGLISH GLASS

OSPRINGE (MAISON DIEU) MUSEUM.

A few good examples and fragments of Seine-Rhine glass found locally.

OXFORD (ASHMOLEAN) MUSEUM.

See above.

PETERBOROUGH MUSEUM.

Several fragments incl. examples from R-B sites. Good miscell. coll. of lead crystal.

PORT SUNLIGHT (LADY LEVER) ART GALLERY.

Some glass.

READING MUSEUM.

Seine-Rhine and other glass (incl. murrine bowl and fragments) from Silchester, mainly fragments. Valuable coll.

RIPON (THORPE PREBEND HOUSE) MUSEUM.

Lead crystal.

ROCHESTER (EASTGATE HOUSE) MUSEUM.

Frontinus barrel-bottle and Snake Thread (Rhine) fragments.

ROTHERHAM (CLIFTON PARK) MUSEUM.

Good coll. of lead crystal and other glass (incl. S. Yorks examples).

RUGBY SCHOOL MUSEUM.

Good small coll. of Syrian glass.

SAFFRON WALDEN MUSEUM.

Good coll. of lead crystal, incl. the famous Saffron Walden posset-pot (type, Plate XVII *a*).

ST. ALBANS (HERTS COUNTY) MUSEUM.

Some Seine-Rhine glass from British and N. Continental sites. Large square. Murrine dish, wrong (?).

SALFORD (PEEL PARK) MUSEUM.

Bushnell Coll. of Seine-Rhine glass (several pieces from Trèves). Also Peers Groves Coll. of Spanish and other glass.

SHEFFIELD (WESTON PARK) MUSEUM.

Zorian Coll. of Syrian glass from Smyrna and elsewhere in Near East. Some German glass (16th-17th cent.). Lead crystal and other English glass, largely of S. Yorks manufacture.

SHIPLEY TECHNICAL SCHOOL MUSEUM.

Technical glass exhibits.

SHREWSBURY PUBLIC MUSEUM.

Good small coll. of vessels and fragments from Wroxeter (Uriconium), incl. Seine-Rhine examples.

SOUTHAMPTON (TUDOR HOUSE) MUSEUM.

Good murrine fragments.

THE PRINCIPAL BRITISH MUSEUMS FOR GLASS

SOUTH SHIELDS PUBLIC MUSEUM.

Small coll. of S-R fragments from local sites.

STOKE-ON-TRENT (HANLEY) MUSEUM.

Coll. of fragments of Lorrainer glass from Blore Park, etc. Loan coll. of German glass (16th-18th cent.).

SWANSEA (GLYNN VIVIAN) ART GALLERY.

The Calland Coll. of lead crystal (18th-19th cent.). Good coll.

TAUNTON (SOMERSET COUNTY) MUSEUM.

English bottles (17th-18th cent.).

TRURO (CORNWALL COUNTY) MUSEUM.

Lead crystal and other glass.

WAKEFIELD (HOLMFIELD PARK) MUSEUM.

Good coll. of lead crystal.

WARRINGTON (MUNICIPAL) MUSEUM.

Coll. of glass pastes, fragments of common squares, window glass, and other fragment pieces (imported) from R-B site at Wilderspool. (May's conclusions very exaggerated). Some lead crystal and local (18th-19th cent.) glass incl. 'Nailsea'.

WISBECH MUSEUM.

Some lead crystal and other glass.

WORTHING MUSEUM.

Very good small coll. of Seine-Rhine glass from High Down A-S cemetery.

WROXETER (URICONIUM) MUSEUM.

Coll. of fragments, incl. Seine-Rhine, from R-B site.

YARMOUTH (TOLHOUSE HALL) MUSEUM.

Coll. of lead crystal and other glass decorated by Absolon of Yarmouth.

YORK: YORKSHIRE PHILOSOPHICAL SOCIETY MUSEUM.

Good coll. of vessels and fragments, largely Seine-Rhine, from local R-B and A-S sites (in the Hospitium building). Good coll. of lead crystal (incl. N. country types), bottles, linen-smoothers, etc. (Main Museum.)

In some museums the glass labels are not accurate or not adequate.

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